

STATE OF SOUTH DAKOTA
DEPARTMENT OF TRANSPORTATION

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	019-288	1	20

Plotting Date: 08/17/2020

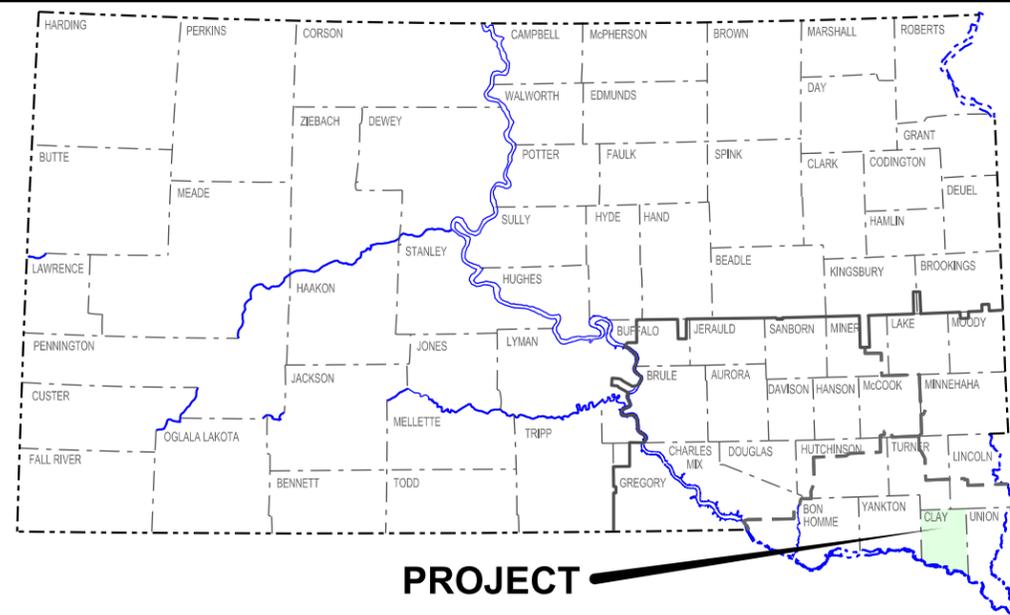
PLANS FOR PROPOSED
PROJECT 019-288
SD HIGHWAY 19
CLAY COUNTY

SCOUR REPAIR AND RIPRAP
PCN I65M

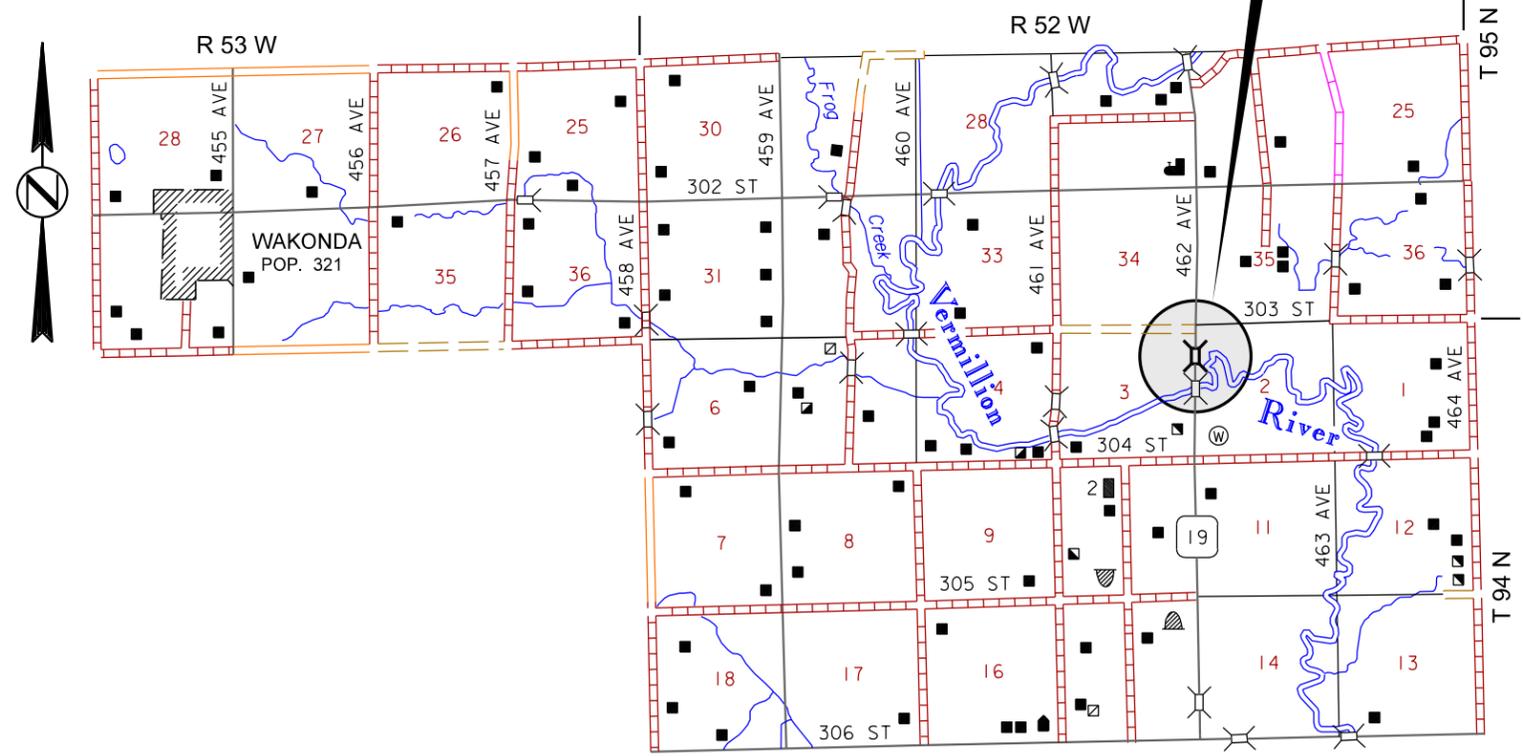
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PLOT SCALE - 1"=7000'



STRUCTURE 14-100-061
218+09.41 to 219+15.41
Continuous Concrete Bridge
106'-0"=0.020 Mile
MRM 19.22



DESIGN DESIGNATION

ADT(2019)	728
ADT(2039)	944
DHV	109
D	51%
T DHV	8%
T ADT	17.5%
V	65 MPH

STORM WATER PERMIT
Receiving Waters: Vermillion River
(Area already disturbed by flood event of Sept 2019): 0.45 Acre
Area Disturbed (same): 0.45 Acre
Total Project Area: 0.7 Acre
Latitude: 42.9955 (Google Maps)
Longitude: -96.9635 (Google Maps)

PLOTTED FROM - TRMLINT15

FILE - ... \CLAY165M\TITLE165M.DGN

PLOT NAME - 1

ESTIMATE OF QUANTITIES

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
009E0010	Mobilization	Lump Sum	LS
120E0600	Contractor Furnished Borrow Excavation (Special)	1,955	CuYd
120E0600	Contractor Furnished Borrow Excavation	3,740	CuYd
230E0020	Contractor Furnished Topsoil	241	CuYd
250E0010	Incidental Work	Lump Sum	LS
464E0100	Controlled Density Fill	8.0	CuYd
634E0010	Flagging	16.0	Hour
634E0110	Traffic Control Signs	179.0	SqFt
634E0120	Traffic Control, Miscellaneous	Lump Sum	LS
700E0310	Class C Riprap	1,112.0	Ton
734E0010	Erosion Control	Lump Sum	LS
734E0154	12" Diameter Erosion Control Wattle	125	Ft
831E0110	Type B Drainage Fabric	1,131	SqYd

ENVIRONMENTAL COMMITMENTS

The SDDOT is committed to protecting the environment and uses Environmental Commitments as a communication tool for the Engineer and Contractor to ensure that attention is given to avoid, minimize, and/or mitigate an environmental impact. Environmental commitments to various agencies and the public have been made to secure approval of this project. An agency with permitting authority can delay a project if identified environmental impacts have not been adequately addressed. Unless otherwise designated, the Contractor's primary contact regarding matters associated with these commitments will be the Project Engineer. These environmental commitments are not subject to change without prior written approval from the SDDOT Environmental Office.

Additional guidance on SDDOT's Environmental Commitments can be accessed through the Environmental Procedures Manual found at: <https://dot.sd.gov/media/documents/EnvironmentalProceduresManual.pdf>

For questions regarding change orders in the field that may have an effect on an Environmental Commitment, the Project Engineer will contact the Environmental Office at 605-773-3098 or 605-773-4336 to determine whether an environmental analysis and/or resource agency coordination is necessary.

COMMITMENT B: FEDERALLY THREATENED, ENDANGERED, AND PROTECTED SPECIES

COMMITMENT B4: BALD EAGLE

Bald eagles are known to occur in this area.

Action Taken/Required:

If a nest is observed within one mile of the project site, notify the Project Engineer immediately so that he/she can consult with the Environmental Office for an appropriate course of action.

COMMITMENT C: WATER SOURCE

The Contractor will not withdraw water with equipment previously used outside the State of South Dakota or previously used in aquatic invasive species waters within South Dakota without prior approval from the SDDOT Environmental Office. Thoroughly wash all construction equipment to prevent and control the introduction and spread of invasive species into the project vicinity.

The Contractor will not withdraw water directly from streams of the James, Big Sioux, and Vermillion watersheds without prior approval from the SDDOT Environmental Office.

Action Taken/Required:

The Contractor will obtain the necessary permits from the regulatory agencies such as the South Dakota Department of Environment and Natural Resources (DENR) and the United States Army Corps of Engineers (USACE) prior to water extraction activities.

Additional information and mapping of Aquatic Invasive Species in South Dakota can be accessed at: <http://sdleastwanted.com/maps/default.aspx>.

COMMITMENT D: WATER QUALITY STANDARDS

COMMITMENT D1: SURFACE WATER QUALITY

The Vermillion River is classified as a warm water semi-permanent fishery with a total suspended solids standard of less than 90 mg/L 30-day average, less than 158 mg/L daily maximum.

Action Taken/Required:

The Contractor is advised that the South Dakota Surface Water Quality Standards, administered by the South Dakota Department of Environment and Natural Resources (DENR), apply to this project. Special construction measures will be taken to ensure the above standard(s) of the surface waters are maintained and protected.

COMMITMENT D2: SURFACE WATER DISCHARGE

The DENR General Permit for Temporary Discharge is required for temporary dewatering and discharges to waters of the state. The effluent limit for total suspended solids will be 90 mg/L 30-day average. The effluent limit applies to discharges to all waters of the state except discharges to waters classified as cold water permanent fish life propagation waters according to the ARSD 74:51:01:45. For discharges to waters of the state classified as cold water permanent fish life propagation waters, the effluent limit for total suspended solids will be 53 mg/L daily maximum.

The permittee has the option of completing effluent testing or implementing a pollution prevention plan for compliance with this permit. If the permittee develops a pollution prevention plan instead of total suspended solids sampling, the plan must be developed and implemented prior to discontinuing total suspended solids sampling. Refer to section 3.0 of the permit. If any pollutants are suspected of being discharged, a sample must be taken for those parameters listed in section 2.2 of the permit.

Refer to Commitment D1: Surface Water Quality for stream classification.

Action Taken/Required:

If construction dewatering is required, the Contractor will obtain the General Permit for Temporary Discharge Activities from the DENR Surface Water Program, 605-773-3351.

<http://denr.sd.gov/des/sw/swqformsandpermits.aspx>

The Contractor will provide a copy of the approved permit to the Project Engineer prior to proceeding with any dewatering activities. The approved permit must be kept on-site and as part of the project records.

Effluent monitoring, as a result of dewatering activities, will be summarized for each month and recorded on a separate Discharge Monitoring Report (DMR) and submitted to DENR monthly. Additional information can be found at <http://denr.sd.gov/des/sw/WhatisaDMR.aspx>

SPECIFICATIONS

Standard Specifications for Roads and Bridges, 2015 Edition and Required Provisions, Supplemental Specifications and Special Provisions as included in the Proposal.

COMMITMENT E: STORM WATER

Construction activities constitute 1 acre or more of earth disturbance and/or work in a waterway.

Action Taken/Required:

The DENR General Permit for Storm Water Discharges Associated with Construction Activities is required for construction activity disturbing one or more acres of earth and work in a waterway. The SDDOT is the owner of this permit and will submit the NOI to DENR 15 days prior to project start in order to obtain coverage under the General Permit. Work can begin once the DENR letter of approval is received.

The Contractor must adhere to the "Special Provision Regarding Storm Water Discharges to Waters of the State."

The Contractor will complete the DENR Contractor Certification Form prior to the pre-construction meeting. The form certifies under penalty of law that the Contractor understands and will comply with the terms and conditions of the permit for this project. Work may not begin on this project until this form is signed and submitted to DENR.

The form can be found at:

<https://denr.sd.gov/des/sw/eforms/CGPAppendixCCA2018Fillable.pdf>

The Contractor is advised that permit coverage may also be required for off-site activities, such as borrow and staging areas, which are the responsibility of the Contractor.

Storm Water Pollution Prevention Plan

The Storm Water Pollution Prevention Plan (SWPPP) will be developed prior to the submittal of the NOI and will be implemented for all construction activities for compliance with the permit. The SWPPP must be kept on-site and updated as site conditions change. Erosion control measures and best management practices will be implemented in accordance with the SWPPP.

The Storm Water, Erosion, and Sediment Control Inspection Report Form DOT 298, will be used for site inspections and to document changes to the SWPPP. A copy of the completed inspection form will be filed with the SWPPP documents and retained for a minimum of three years.

The inspection will include disturbed areas of the construction site that have not been finally stabilized, areas used for storage materials, structural control measures, and locations where vehicles enter or exit the site. These areas will be inspected for evidence of, or the potential for, pollutants entering the drainage system. Erosion and sediment control measures identified in the SWPPP will be observed to ensure that they are operating correctly and sediment is not tracked off of the site.

Information on storm water permits and SWPPPs are available on the following websites:

SDDOT: <https://dot.sd.gov/doing-business/environmental/stormwater>

DENR: <http://denr.sd.gov/des/sw/stormwater.aspx>

EPA: <https://www.epa.gov/npdes>

COMMITMENT H: WASTE DISPOSAL SITE

The Contractor will furnish a site(s) for the disposal of construction and/or demolition debris generated by this project.

Action Taken/Required:

Construction and/or demolition debris may not be disposed of within the Public ROW.

The waste disposal site(s) will be managed and reclaimed in accordance with the following from the General Permit for Construction/Demolition Debris Disposal Under the South Dakota Waste Management Program issued by the Department of Environment and Natural Resources.

The waste disposal site(s) will not be located in a wetland, within 200 feet of surface water, or in an area that adversely affects wildlife, recreation, aesthetic value of an area, or any threatened or endangered species, as approved by the Environmental Office and the Project Engineer.

If the waste disposal site(s) is located such that it is within view of any ROW, the following additional requirements will apply:

1. Construction and/or demolition debris consisting of concrete, asphalt concrete, or other similar materials will be buried in a trench completely separate from wood debris. The final cover over the construction and/or demolition debris will consist of a minimum of 1 foot of soil capable of supporting vegetation. Waste disposal sites provided outside of the Public ROW will be seeded in accordance with Natural Resources Conservation Service recommendations. The seeding recommendations may be obtained through the appropriate County NRCS Office. The Contractor will control the access to waste disposal sites not within the Public ROW with fences, gates, and placement of a sign or signs at the entrance to the site stating No Dumping Allowed.
2. Concrete and asphalt concrete debris may be stockpiled within view of the ROW for a period of time not to exceed the duration of the project. Prior to project completion, the waste will be removed from view of the ROW or buried, and the waste disposal site reclaimed as noted above.

The above requirements will not apply to waste disposal sites that are covered by an individual solid waste permit as specified in SDCL 34A-6-58, SDCL 34A-6-1.13, and ARSD 74:27:10:06.

Failure to comply with the requirements stated above may result in civil penalties in accordance with South Dakota Solid Waste Law, SDCL 34A-6-1.31.

Cost associated with furnishing waste disposal site(s), disposing of waste, maintaining control of access (fence, gates and signs), and reclamation of the waste disposal site(s) will be incidental to the various contract items.

COMMITMENT I: HISTORICAL PRESERVATION OFFICE CLEARANCES

State Historical Preservation Office (SHPO or THPO) concurrence has not been obtained for this project.

Action Taken/Required:

All earth disturbing activities require a cultural resource review prior to scheduling the pre-construction meeting. This work includes but is not limited to: Contractor furnished material sources, material processing sites, stockpile sites, storage areas, plant sites, and waste areas.

The Contractor will arrange and pay for a record search and when necessary, a cultural resource survey. The Contractor has the option to contact the state Archaeological Research Center (ARC) at 605-394-1936 or another qualified archaeologist, to obtain either a records search or a cultural resources survey. A record search might be sufficient for review if the site was previously surveyed; however, a cultural resources survey may need to be conducted by a qualified archaeologist.

The Contractor will provide ARC with the following: a topographical map or aerial view of which the site is clearly outlined, site dimensions, project number, and PCN. If applicable, provide evidence that the site has been previously disturbed by farming, mining, or construction activities with a landowner statement that artifacts have not been found on the site.

The Contractor will submit the cultural resources survey report to SDDOT Environmental Office, 700 East Broadway Avenue, Pierre, SD 57501-2586. SDDOT will submit the information to the appropriate SHPO/THPO. Allow **30 Days** from the date this information is submitted to the Environmental Engineer for SHPO/THPO review.

In the event of an inadvertent discovery of human remains, funerary objects, or if evidence of cultural resources is identified during project construction activities, then such activities will immediately cease, and the Project Engineer will be immediately notified. The Project Engineer will contact the SDDOT Environmental Office to determine an appropriate course of action.

The Contractor is responsible for obtaining any additional permits and clearances for Contractor furnished material sources, material processing sites, stockpile sites, storage areas, plant sites, and waste areas that affect wetlands, threatened and endangered species, or waterways. The Contractor will not utilize a site known or suspected of having contaminated soil or water. The Contractor will provide the required permits and clearances to the Project Engineer at the preconstruction meeting.

COMMITMENT N: SECTION 404 PERMIT

The SDDOT has obtained a Section 404 Permit from the USACE for the permanent actions associated with this project.

Action Taken/Required:

The Contractor will comply with all requirements contained in the Section 404 Permit.

The Contractor will also be responsible for obtaining a Section 404 Permit for any dredge, excavation, or fill activities associated with material sources, storage areas, waste sites, and Contractor work sites outside the plan work limits that affect wetlands, floodplains, or waters of the United States.

UTILITIES

The Contractor will contact the involved utility companies through South Dakota One Call (1-800-781-7474) prior to starting work. It will be the responsibility of the Contractor to coordinate work with the utility owners to avoid damage to existing facilities.

Utilities are not planned to be affected on this project. If utilities are identified near the improvement area through the SD One Call process as required by South Dakota Codified Law 49-7A and Administrative Rule Article 20:25; the Contractor will contact the Project Engineer to determine if project changes are necessary to avoid utility impacts.

WATER LEVEL/DEWATERING AT STRUCTURE

At the time of plans creation, the area to be repaired and riprapped was inundated with standing water in the scour hole (no flowing water beneath the structure). The depth of water at its deepest point (observed on 8/11/2020) was 17'. The area will likely still be inundated at construction time. If so, the Contractor will be required to dewater the project area and provide a firm and unyielding surface to allow for placement of the Contractor Furnished Borrow Excavation and Riprap. The dewatering/drying process will be completed to the satisfaction of the Engineer.

The Contractor should visit the site prior to bidding the project to determine the extent of dewatering needed. Cost for dewatering will be incidental to the contract unit prices for the various items.

CONTRACTOR FURNISHED TOPSOIL

The Contractor will be required to place Contractor Furnished Topsoil (approximately 4" depth) on areas where borrow is placed. Cost for this work will be included in the contract unit price per cubic yard for Contractor Furnished Topsoil.

INCIDENTAL WORK

The Contractor will be required to reattach and replace the drainage tubing at all four corners of the bridge as detailed in these plans.

Cost for material, labor and equipment necessary to reattach and replace the drainage tubing will be included in the contract lump sum price for Incidental Work.

EROSION CONTROL

The estimated area requiring erosion control is 19,500 square feet. Cost for the erosion control work for furnishing, placing and maintaining erosion control including equipment, labor, seeding and mulching will be incidental to the contract lump sum price for Erosion Control.

The limits of erosion control work will be determined by the Engineer during construction.

Mycorrhizal Inoculum

Mycorrhizal inoculum will consist of mycorrhizal fungi spores and mycorrhizal fungi-infected root fragments in a solid carrier. The carrier may include organic materials, calcinated clay, or other materials consistent with application and good plant growth. The supplier will provide certification of the fungal species claimed and the live propagule count. The inoculum will include the following fungal species:

- 25% *Glomus intraradices*
- 25% *Glomus aggregatum or deserticola*
- 25% *Glomus mosseae*
- 25% *Glomus etunicatum*

All seed will be inoculated by the seed supplier with a minimum of 100,000 live propagules of mycorrhizal fungi per acre. Cost for inoculating the seed will be incidental to the contract unit price per pound for the corresponding permanent seed mixture.

The mycorrhizal inoculum will be as shown below or an approved equal:

Product	Manufacturer
MycoApply	Mycorrhizal Applications, Inc. Grants Pass, OR Phone: 1-866-476-7800 www.mycorrhizae.com
AM 120 Multi Species Blend	Reforestation Technologies Int. Gilroy, CA Phone: 1-800-784-4769 www.reforest.com

Permanent Seeding

Type G Permanent Seed Mixture will consist of the following:

Grass Species	Variety	Pure Live Seed (PLS) (Pounds/Acre)
Western Wheatgrass	Arriba, Flintlock, Rodan, Rosana, Walsh	7
Switchgrass	Dacotah, Forestburg, Nebraska 28, Pathfinder, Summer, Sunburst, Trailblazer	3
Indiangrass	Holt, Tomahawk, Chief, Nebraska 54	3
Big Bluestem	Bison, Bonilla, Champ, Sunnyview, Rountree, Bonanza	3
Oats or Spring Wheat: April through May; Winter Wheat: August through November		10
Total:		26

Mulching (Grass Hay or Straw)

Grass Hay or Straw Mulch will be used as temporary erosion control between the riprap and the right-of-way line.

If the Contractor uses a no-till drill, mulch may be applied prior to seeding and the mulch can then be punched into the soil by the no-till drill. If the Contractor uses this process, the no-till drill seeding will be completed immediately following the mulch application and the mulch will be punched into the soil at a 3-inch depth.

EROSION CONTROL WATTLE

Upon completion of the scour protection and riprap, 125' of erosion control wattles for restraining the flow of runoff and sediment will be installed 1' inside of the east right-of-way line. Refer to Standard Plate 734.06 for details.

The Contractor will provide certification that the erosion control wattles do not contain noxious weed seeds.

Erosion control wattles will remain on the project to decompose.

The erosion control wattle provided will be from the approved product list. The approved product list for erosion control wattle may be viewed at the following internet site:

<http://apps.sd.gov/HC60ApprovedProducts/main.aspx>

STORMWATER POLLUTION PREVENTION PLAN CHECKLIST

(The numbers left of the title headings are **reference numbers** to the GENERAL PERMIT FOR STORM WATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITIES (Stormwater Permit))

5.3 (2): STAFF TRAINING/SWPPP IMPLEMENTATION

To promote stormwater management awareness specific for this project, the Contractor's Erosion Control Supervisor should provide correspondence of how the SWPPP will be implemented. The Contractor's Erosion Control Supervisor is responsible for providing this information at the preconstruction meeting, and subsequently completing an attendance log, which should identify site-specific implementation of the SWPPP and the names of the personnel who attended the preconstruction meeting. Documentation of the preconstruction meeting will be filed with the SWPPP documents.

5.3 (3): DESCRIPTION OF CONSTRUCTION ACTIVITIES

- **5.3 (3a): Project Limits** (See Title Sheet)
- **5.3 (3a): Project Description** (See Title Sheet)
- **5.3 (4): Site Map(s)** (See Title Sheet and Plans)
- **Major Soil Disturbing Activities** (check all that apply)
 - Clearing and grubbing
 - Excavation/borrow
 - Grading and shaping
 - Filling
 - Other (describe):
- **5.3 (3b): Total Project Area** 0.7 Acre
- **5.3 (3b): Total Area to be Disturbed** 0.45 Acre
- **5.3 (3c): Maximum Area Disturbed at One Time** 0.45 Acre
- **5.3 (3d): Existing Vegetative Cover (%)** In water
- **5.3 (3d): Description of Vegetative Cover**

- **5.3 (3e): Soil Properties:** AASHTO Soil or USDA-NRCS Soil Series Classification
- **5.3 (3f): Name of Receiving Water Body/Bodies** Overflow to the Vermillion River
- **5.3 (3g): Location of Construction Support Activity Areas**

5.3 (3h): ORDER OF CONSTRUCTION ACTIVITIES

- **Special sequencing requirements.**

The Contractor will enter the Estimated Start Date.

Description	Estimated Start Date
Dewater scour hole	
Place Borrow to restore bridge berms and channel	
Place Riprap	
Place Topsoil	
Seed & Mulch where not inundated after construction	

5.3 (5): DESCRIPTION AND MAINTENANCE OF CONTROL MEASURES

All controls will be maintained in good working order. Necessary repairs will be initiated within 24 hours of the site inspection report. Include the technical reasoning for selecting each control. (check all that apply)

Perimeter Controls (See Detail Plan Sheets)

Description	Estimated Start Date
<input checked="" type="checkbox"/> Natural Buffers (within 50 ft of Waters of State)	
<input type="checkbox"/> Silt Fence	
<input checked="" type="checkbox"/> Erosion Control Wattles	
<input type="checkbox"/> Temporary Berm / Windrow	
<input type="checkbox"/> Floating Silt Curtain	
<input type="checkbox"/> Stabilized Construction Entrances	
<input type="checkbox"/> Entrance/Exit Equipment Tire Wash	
<input type="checkbox"/> Other:	

Structural Erosion and Sediment Controls

Description	Estimated Start Date
<input type="checkbox"/> Silt Fence	
<input type="checkbox"/> Temporary Berm/Windrow	
<input type="checkbox"/> Erosion Control Wattles	
<input type="checkbox"/> Temporary Sediment Barriers	
<input type="checkbox"/> Erosion Bales	
<input type="checkbox"/> Temporary Slope Drain	
<input type="checkbox"/> Turf Reinforcement Mat	
<input checked="" type="checkbox"/> Riprap	
<input type="checkbox"/> Gabions	
<input type="checkbox"/> Rock Check Dams	
<input type="checkbox"/> Sediment Traps/Basins	
<input type="checkbox"/> Culvert Inlet Protection	
<input type="checkbox"/> Transition Mats	
<input type="checkbox"/> Median/Area Drain Inlet Protection	
<input type="checkbox"/> Curb Inlet Protection	
<input type="checkbox"/> Interceptor Ditch	
<input type="checkbox"/> Concrete Washout Facility	
<input type="checkbox"/> Work Platform	
<input type="checkbox"/> Temporary Water Barrier	
<input type="checkbox"/> Temporary Water Crossing	
<input type="checkbox"/> Permanent Stormwater Ponds	
<input type="checkbox"/> Permanent Open Vegetated Swales	
<input type="checkbox"/> Natural Depressions to allow for Infiltration	
<input type="checkbox"/> Sequential Systems that combine several practices	
<input type="checkbox"/> Other:	

Dust Controls

Description	Estimated Start Date
<input type="checkbox"/> Tarps & Wind impervious fabrics	
<input type="checkbox"/> Watering	
<input type="checkbox"/> Stockpile location/orientation	
<input type="checkbox"/> Dust Control Chlorides	
<input type="checkbox"/> Other	

Dewatering BMPs

Description	Estimated Start Date
<input type="checkbox"/> Sediment Basins	
<input type="checkbox"/> Dewatering bags	
<input type="checkbox"/> Weir tanks	
<input type="checkbox"/> Temporary Diversion Channel	
<input checked="" type="checkbox"/> Other: The water is non-turbid standing water in a scour hole. Anticipating that it can be pumped into the downstream channel through a sediment trap.	

Stabilization Practices (See Detail Plan Sheets)

(Stabilization measures will begin the following work day whenever earth disturbing activity on any portion of the site has temporarily or permanently ceased. Temporary stabilization will be completed as soon as practicable but no later than 14 days after initiating soil stabilization activities (3.18))

Description	Estimated Start Date
<input type="checkbox"/> Vegetation Buffer Strips	
<input type="checkbox"/> Temporary Seeding (Cover Crop Seeding)	
<input checked="" type="checkbox"/> Permanent Seeding	
<input type="checkbox"/> Sodding	
<input type="checkbox"/> Planting (Woody Vegetation for Soil Stabilization)	
<input checked="" type="checkbox"/> Mulching (Grass Hay or Straw)	
<input type="checkbox"/> Fiber Mulching (Wood Fiber Mulch)	
<input type="checkbox"/> Soil Stabilizer	
<input type="checkbox"/> Bonded Fiber Matrix	
<input type="checkbox"/> Fiber Reinforced Matrix	
<input type="checkbox"/> Erosion Control Blankets	
<input type="checkbox"/> Surface Roughening (e.g. tracking)	
<input type="checkbox"/> Other:	

Wetland Avoidance

Will construction and/or erosion and sediment controls impinge on regulated wetlands? Yes No If yes, the structural and erosion and sediment controls have been included in the total project wetland impacts and have been included in the 404 permit process with the USACE.

5.3 (6): PROCEDURES FOR INSPECTIONS

- Inspections will be conducted at least once every 7 days.
- All controls will be maintained in good working order. Necessary repairs will be initiated within 24 hours of the site inspection report.
- Silt fence will be inspected for depth of sediment and for tears to ensure the fabric is securely attached to the posts and that the posts are well anchored. Sediment buildup will be removed from the silt fence when it reaches 1/3 of the height of the silt fence.
- Sediment basins and traps will be checked. Sediment will be removed when depth reaches approximately 50 percent of the structure's capacity, and at the conclusion of the construction.
- Check dams will be inspected for stability. Sediment will be removed when depth reaches 1/2 the height of the dam.
- All seeded areas will be checked for bare spots, washouts, and vigorous growth free of significant weed infestations.
- Inspection and maintenance reports will be prepared on form DOT 298 for each site inspection, this form will also be used to document changes to the SWPPP. A copy of the completed inspection form will be filed with the SWPPP documents.
- The SDDOT Project Engineer and Contractor's Erosion Control Supervisor are responsible for inspections. Maintenance and repair activities are the responsibility of the Contractor. The SDDOT Project Engineer will complete the inspection and maintenance reports and distribute copies per the distribution instructions on DOT 298.

5.3 (7): POST CONSTRUCTION STORMWATER MANAGEMENT

Stormwater management will be handled by temporary controls outlined in "DESCRIPTION AND MAINTENANCE OF CONTROL MEASURES" above, and any permanent controls needed to meet permanent stormwater management needs in the post construction period will be shown in the plans and noted as permanent.

5.3 (8): POLLUTION PREVENTION PROCEDURES

5.3 (8a): Spill Prevention and Response Procedures

➤ Material Management

▪ Housekeeping

- Only needed products will be stored on-site by the Contractor.
- Except for bulk materials the contractor will store all materials under cover and/or in appropriate containers.
- Products must be stored in original containers and labeled.
- Material mixing will be conducted in accordance with the manufacturer's recommendations.
- When possible, all products will be completely used before properly disposing of the container off-site.
- The manufacturer's directions for disposal of materials and containers will be followed.
- The Contractor's site superintendent will inspect materials storage areas regularly to ensure proper use and disposal.
- Dust generated will be controlled in an environmentally safe manner.

▪ Hazardous Materials

- Products will be kept in original containers unless the container is not resealable and provide secondary containment as applicable.
- Original labels and material safety data sheets will be retained in a safe place to relay important product information.
- If surplus product must be disposed of, manufacturer's label directions for disposal will be followed.

- Maintenance and repair of all equipment and vehicles involving oil changes, hydraulic system drain down, de-greasing operations, fuel tank drain down and removal, and other activities which may result in the accidental release of contaminants will be conducted on an impervious surface and under cover during wet weather to prevent the release of contaminants onto the ground.
- Wheel wash water will be collected and allowed to settle out suspended solids prior to discharge. Wheel wash water will not be discharged directly into any stormwater system or stormwater treatment system.
- Potential pH-modifying materials such as: bulk cement, cement kiln dust, fly ash, new concrete washings, concrete pumping, residuals from concrete saw cutting (either wet or dry), and mixer washout waters will be collected on site and managed to prevent contamination of stormwater runoff.

➤ Spill Control Practices

In addition to the previous housekeeping and management practices, the following practices will be followed for spill prevention and cleanup if needed.

- For all hazardous materials stored on site, the manufacturer's recommended methods for spill cleanup will be clearly posted. Site personnel will be made aware of the procedures and the locations of the information and cleanup supplies.
- Appropriate cleanup materials and equipment will be maintained by the Contractor in the materials storage area on-site. As appropriate, equipment and materials may include items such as brooms, dust pans, mops, rags, gloves, goggles, kitty litter, sand, sawdust, and plastic and metal trash containers specifically for cleanup purposes.
- All spills will be cleaned immediately after discovery and the materials disposed of properly.
- The spill area will be kept well ventilated and personnel will wear appropriate protective clothing to prevent injury from contact with a hazardous substance.
- After a spill a report will be prepared describing the spill, what caused it, and the cleanup measures taken. The spill prevention plan will be adjusted to include measures to prevent this type of spill from reoccurring, as well as clean up instructions in the event of reoccurrences.
- The Contractor's site superintendent, responsible for day-to-day operations, will be the spill prevention and cleanup coordinator.

➤ Spill Response

The primary objective in responding to a spill is to quickly contain the material(s) and prevent or minimize migration into stormwater runoff and conveyance systems. If the release has impacted on-site stormwater, it is critical to contain the released materials on-site and prevent their release into receiving waters. If a spill of pollutants threatens stormwater or surface water at the site, the spill response procedures outlined below must be implemented in a timely manner to prevent the release of pollutants.

- The Contractor's site superintendent will be notified immediately when a spill or the threat of a spill is observed. The superintendent will assess the situation and determine the appropriate response.
- If spills represent an imminent threat of escaping erosion and sediment controls and entering receiving waters, personnel will be directed to respond immediately to contain the release and notify the superintendent after the situation has been stabilized.

- Spill kits containing appropriate materials and equipment for spill response and cleanup will be maintained by the Contractor at the site.
- If oil sheen is observed on surface water (e.g. settling ponds, detention ponds, swales), action will be taken immediately to remove the material causing the sheen. The Contractor will use appropriate materials to contain and absorb the spill. The source of the oil sheen will also be identified and removed or repaired as necessary to prevent further releases.
- If a spill occurs the superintendent or the superintendent's designee will be responsible for completing the spill reporting form and for reporting the spill to SDDENR.
- Personnel with primary responsibility for spill response and cleanup will receive training by the Contractor's site superintendent or designee. The training must include identifying the location of the spill kits and other spill response equipment and the use of spill response materials.
- Spill response equipment will be inspected and maintained as necessary to replace any materials used in spill response activities.

5.3 (8b): WASTE MANAGEMENT PROCEDURES

➤ Waste Disposal

- All liquid waste materials will be collected and stored in approved sealed containers. All trash and construction debris from the site will be deposited in the approved containers. Containers will be serviced as necessary, and the trash will be hauled to an approved disposal site or licensed landfill. All onsite personnel will be instructed in the proper procedures for waste disposal and notices stating proper practices will be posted. The Contractor is responsible for ensuring waste disposal procedures are followed.

➤ Hazardous Waste

- All hazardous waste materials will be disposed of in a manner specified by local or state regulations or by the manufacturer. Site personnel will be instructed in these practices, and the Contractor will be responsible for seeing that these practices are followed.

➤ Sanitary Waste

- Portable sanitary facilities will be provided on all construction sites. Sanitary waste will be collected from the portable units which must be secured to prevent tipping and serviced in a timely manner by a licensed waste management Contractor or as required by any local regulations.

5.3 (9): CONSTRUCTION SITE POLLUTANTS

The following materials or substances are expected to be present on the site during the construction period. These materials will be handled as noted under the heading "POLLUTION PREVENTION PROCEDURES" (check all that apply).

- Concrete and Portland Cement
- Detergents
- Paints
- Metals
- Bituminous Materials
- Petroleum Based Products
- Diesel Exhaust Fluid
- Cleaning Solvents
- Wood
- Cure
- Texture
- Chemical Fertilizers
- Other:

Product Specific Practices

▪ **Petroleum Products**

All on-site vehicles will be monitored for leaks and receive regular preventive maintenance to reduce the chance of leakage. Petroleum products will be stored in tightly sealed containers which are clearly labeled.

▪ **Fertilizers**

Fertilizers will be applied only in the amounts specified by the SDDOT. Once applied, fertilizers will be worked into the soil to limit the exposure to stormwater. Fertilizers will be stored in an enclosed area. The contents of partially used fertilizer bags will be transferred to sealable containers to avoid spills.

▪ **Paints**

All containers will be tightly sealed and stored when not required for use. The excess will be disposed of according to the manufacturer's instructions and any applicable state and local regulations.

▪ **Concrete Trucks**

Contractors will provide designated truck washout facilities on the site. These areas must be self-contained and not connected to any stormwater outlet of the site. Upon completion of construction, the area at the washout facility will be properly stabilized.

5.3 (10): NON-STORMWATER DISCHARGES

The following non-stormwater discharges are anticipated during the course of this project (check all that apply).

- Discharges from water line flushing.
- Pavement wash-water, where no spills or leaks of toxic or hazardous materials have occurred.
- Uncontaminated ground water associated with dewatering activities.

5.3 (11): INFEASIBILITY DOCUMENTATION

If it is determined to be infeasible to comply with any of the requirements of the Stormwater Permit, the infeasibility determination must be thoroughly documented in the SWPPP.

7.0: SPILL NOTIFICATION

In the event of a spill, the Contractor's site superintendent will make the appropriate notification(s), consistent with the following procedures:

- A release or spill of a regulated substance (includes petroleum and petroleum products) must be reported to SDDENR immediately **if any one of the following** conditions exists:
 - The release or spill threatens or is able to threaten waters of the state (surface water or ground water)
 - The release or spill causes an immediate danger to human health or safety
 - The release or spill exceeds 25 gallons
 - The release or spill causes a sheen on surface water
 - The release or spill of any substance that exceeds the ground water quality standards of ARSD Chapter 74:54:01
 - The release or spill of any substance that exceeds the surface water quality standards of ARSD Chapter 74:51:01
 - The release or spill of any substance that harms or threatens to harm wildlife or aquatic life
 - The release or spill is required to be reported according to Superfund Amendments and Reauthorization Act (SARA) Title III List of Lists, Consolidated List of Chemicals Subject to Reporting Under the Emergency Planning and Community Right to Know Act, US Environmental Protection Agency.
- To report a release or spill, call SDDENR at 605-773-3296 during regular office hours (8 a.m. to 5 p.m. Central Standard Time). To report the release after hours, on weekends or holidays, call South Dakota Emergency Management at 605-773-3231. Reporting the release to SDDENR does not meet any obligation for reporting to other state, local, or federal agencies. Therefore, you must also contact local authorities to determine the local reporting requirements for releases. A written report of the unauthorized release of any regulated substance, including quantity discharged, and the location of the discharge will be sent to SDDENR within 14 days of the discharge.

5.4: SWPPP CERTIFICATIONS

➤ **Certification of Compliance with Federal, State, and Local Regulations**

The Storm Water Pollution Prevention Plan (SWPPP) for this project reflects the requirements of all local municipal jurisdictions for storm water management and sediment and erosion control as established by ordinance, as well as other state and federal requirements for sediment and erosion control plans, permits, notices or documentation as appropriate.

➤ **South Dakota Department of Transportation**

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Joanne M. Hight

Authorized Signature (See the General Permit, Section 7.4 (1))

➤ **Prime Contractor**

This section is to be executed by the General Contractor after the award of the contract. This section may be executed any time there is a change in the Prime Contractor of the project.

I certify under penalty of law that this document and all attachments will be revised or maintained under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Authorized Signature

CONTACT INFORMATION

The following personnel are duly authorized representatives and have signatory authority for modifications made to the SWPPP:

➤ **Contractor Information:**

- Prime Contractor Name: _____
- Contractor Contact Name: _____
- Address: _____
- _____
- City: _____ State: _____ Zip: _____
- Office Phone: _____ Field: _____
- Cell Phone: _____ Fax: _____

➤ **Erosion Control Supervisor**

- Name: _____
- Address: _____
- _____
- City: _____ State: _____ Zip: _____
- Office Phone: _____ Field: _____
- Cell Phone: _____ Fax: _____

➤ **SDDOT Project Engineer**

- Name: _____
- Business Address: _____
- Job Office Location: _____
- City: _____ State: _____ Zip: _____
- Office Phone: _____ Field: _____
- Cell Phone: _____ Fax: _____

➤ **SDDENR Contact Spill Reporting**

- Business Hours Monday-Friday (605) 773-3296
- Nights and Weekends (605) 773-3231

➤ **SDDENR Contact for Hazardous Materials.**

- (605) 773-3153

➤ **National Response Center Hotline**

- (800) 424-8802.

➤ **SDDENR Stormwater Contact Information**

- SDDENR Stormwater (800) 737-8676
- Surface Water Quality Program (605) 773-3351

5.5: REQUIRED SWPPP MODIFICATIONS

➤ **5.5 (1): Conditions Requiring SWPPP Modification**

The SWPPP must be modified, including the site map(s), in response to any of the following conditions:

- When a new operator responsible for implementation of any part the SWPPP begins work on the site.
- When changes to the construction plans, sediment and erosion control measures, or any best management practices on site that are no longer accurately reflected in the SWPPP. This includes changes made in response to corrective actions triggered by inspections.
- To reflect areas on the site map where operational control has been transferred (including the date of the transfer) or has been covered under a new permit since initiating coverage under this general permit.
- If inspections by site staff, local officials, SDDENR, or U.S. EPA determine that SWPPP modifications are necessary for compliance with the Stormwater Permit.
- To reflect any revisions to applicable federal, state, or local requirements that affect the control measures implemented at the site.
- If approved by the Secretary, to reflect any changes in chemical water treatment systems or controls, including the use of a different water treatment chemical, age rates, different areas, or methods of application.

➤ **5.5 (2): Deadlines for SWPPP Modification**

Any required revisions to the SWPPP must be completed within 7 calendar days following any of the items listed above.

➤ **5.5 (3): Documentation of Modifications to the Plan**

All SWPPP modification records are required to be maintained showing the dates of when the modification occurred. The records must include the name of the person authorizing each change and a brief summary of all changes.

➤ **5.5 (4): Certification Requirements**

All modifications made to the SWPPP must be signed and certified as required in Section 7.4.

➤ **5.5 (5): Required Notice to Other Operators**

If there are multiple operators at the site, the Contractor's Erosion Control Supervisor must notify each operator that may be impacted by the change to the SWPPP within 24 hours.

When modifications as described above occur, the SWPPP will be modified to provide appropriate protection to disturbed areas, all storm water structures, and adjacent waters. The SDDOT Project Engineer will modify the SWPPP using the DOT 298 form and drawings on the plan will be modified to reflect the needed changes. Copies of the DOT 298 forms and the SWPPP will be retained on site in a designated place for review throughout the course of the project. A copy of the DOT 298 form will be given to the Contractor Erosion Control Supervisor and a copy will be emailed to the SDDOT Environmental Section in accordance with the DOT 298 Form.

MAINTENANCE OF TRAFFIC

Unless otherwise stated in these plans, no work will be allowed during hours of darkness.

Lane closures will exist only when required for manned workspaces or haul of materials into the work area. The lanes will be opened to traffic when manned workspaces or haul of materials is not in progress.

Use of the shoulder as a driving lane will not be permitted. Any damage to the shoulder due to traffic or Contractor's equipment will be repaired at no additional cost to the State.

During construction, all vehicles, equipment, and materials being used must be located within the workspace.

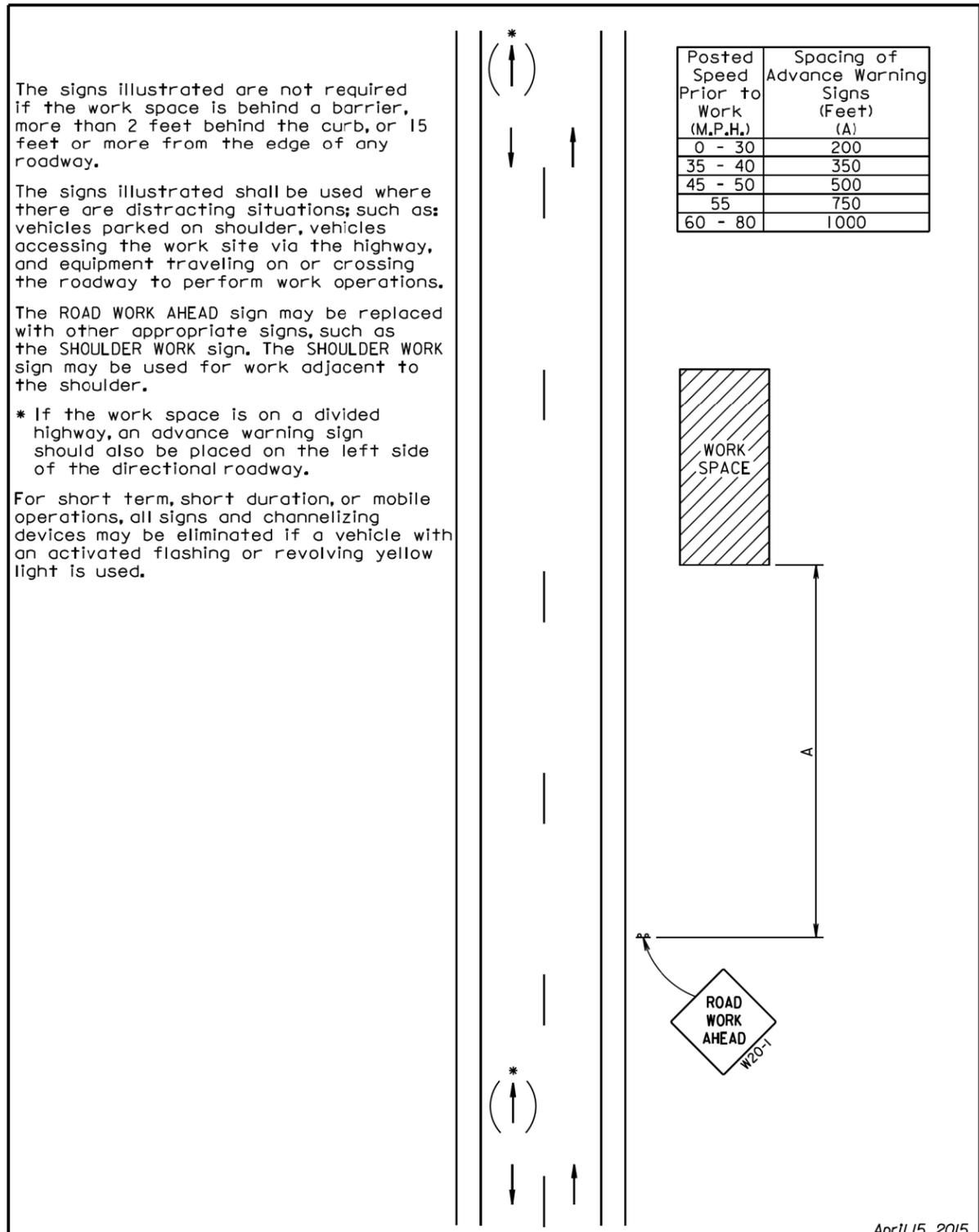
Sufficient traffic control devices have been included in these plans to sign one workspace.

Traffic Control Signs, as shown in the Estimate of Quantities, are estimates. Contractor's operation may require adjustments in quantities, either more or less. Payment will be for those signs actually ordered by the Engineer and used.

All haul trucks will be equipped with an additional flashing amber light that is visible from the backside of the haul truck. The costs for the flashing amber lights will be incidental to the various related contract items.

ITEMIZED LIST FOR TRAFFIC CONTROL SIGNS

SIGN CODE	SIGN DESCRIPTION	CONVENTIONAL ROAD			
		NUMBER	SIGN SIZE	SQFT PER SIGN	SQFT
W3-4	BE PREPARED TO STOP	2	48" x 48"	16.0	32.0
W16-2P	___ FEET (supplemental distance plaque)	2	30" x 24"	5.0	10.0
W20-1	ROAD WORK AHEAD	2	48" x 48"	16.0	32.0
W20-4	ONE LANE ROAD AHEAD	2	48" x 48"	16.0	32.0
W20-7	FLAGGER (symbol)	2	48" x 48"	16.0	32.0
W21-5	SHOULDER WORK	2	48" x 48"	16.0	32.0
G20-2	END ROAD WORK	2	36" x 18"	4.5	9.0
		CONVENTIONAL ROAD			
		TRAFFIC CONTROL SIGNS SQFT			179.0



The signs illustrated are not required if the work space is behind a barrier, more than 2 feet behind the curb, or 15 feet or more from the edge of any roadway.

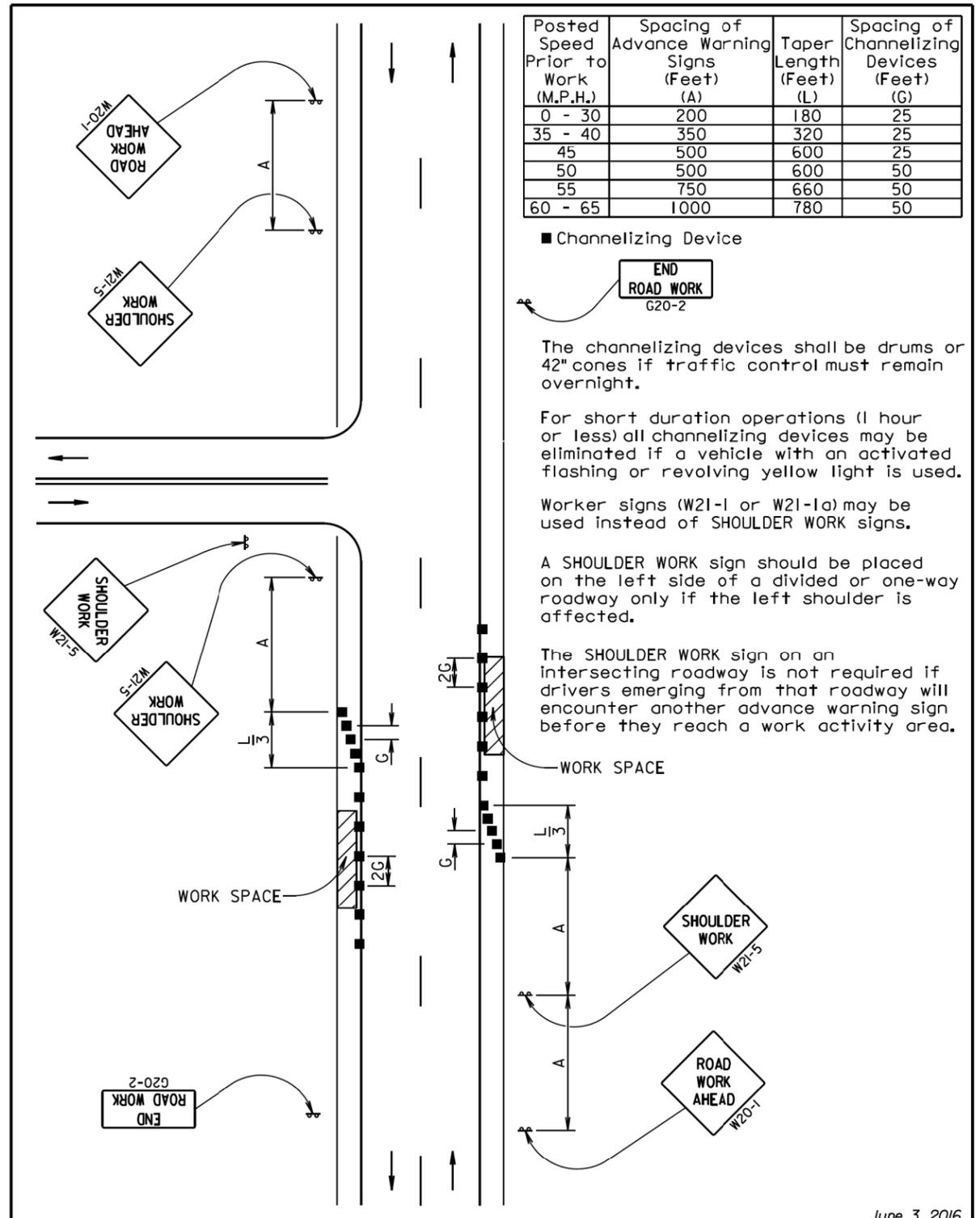
The signs illustrated shall be used where there are distracting situations, such as: vehicles parked on shoulder, vehicles accessing the work site via the highway, and equipment traveling on or crossing the roadway to perform work operations.

The ROAD WORK AHEAD sign may be replaced with other appropriate signs, such as the SHOULDER WORK sign. The SHOULDER WORK sign may be used for work adjacent to the shoulder.

* If the work space is on a divided highway, an advance warning sign should also be placed on the left side of the directional roadway.

For short term, short duration, or mobile operations, all signs and channelizing devices may be eliminated if a vehicle with an activated flashing or revolving yellow light is used.

April 15, 2015



The channelizing devices shall be drums or 42" cones if traffic control must remain overnight.

For short duration operations (1 hour or less) all channelizing devices may be eliminated if a vehicle with an activated flashing or revolving yellow light is used.

Worker signs (W21-1 or W21-1a) may be used instead of SHOULDER WORK signs.

A SHOULDER WORK sign should be placed on the left side of a divided or one-way roadway only if the left shoulder is affected.

The SHOULDER WORK sign on an intersecting roadway is not required if drivers emerging from that roadway will encounter another advance warning sign before they reach a work activity area.

June 3, 2016

Posted Speed Prior to Work (M.P.H.)	Spacing of Advance Warning Signs (Feet) (A)	Spacing of Channelizing Devices (Feet) (G)
0 - 30	200	25
35 - 40	350	25
45	500	25
50	500	50
55	750	50
60 - 65	1000	50

● Flagger
■ Channelizing Device

For low-volume traffic situations with short work zones on straight roadways where the flagger is visible to road users approaching from both directions, a single flagger may be used.

The ROAD WORK AHEAD and the END ROAD WORK signs may be omitted for short duration operations (1 hour or less).

For tack and/or flush seal operations, when flaggers are not being used, the FRESH OIL sign (W21-2) shall be displayed in advance of the liquid asphalt areas.

Flashing warning lights and/or flags may be used to call attention to the advance warning signs.

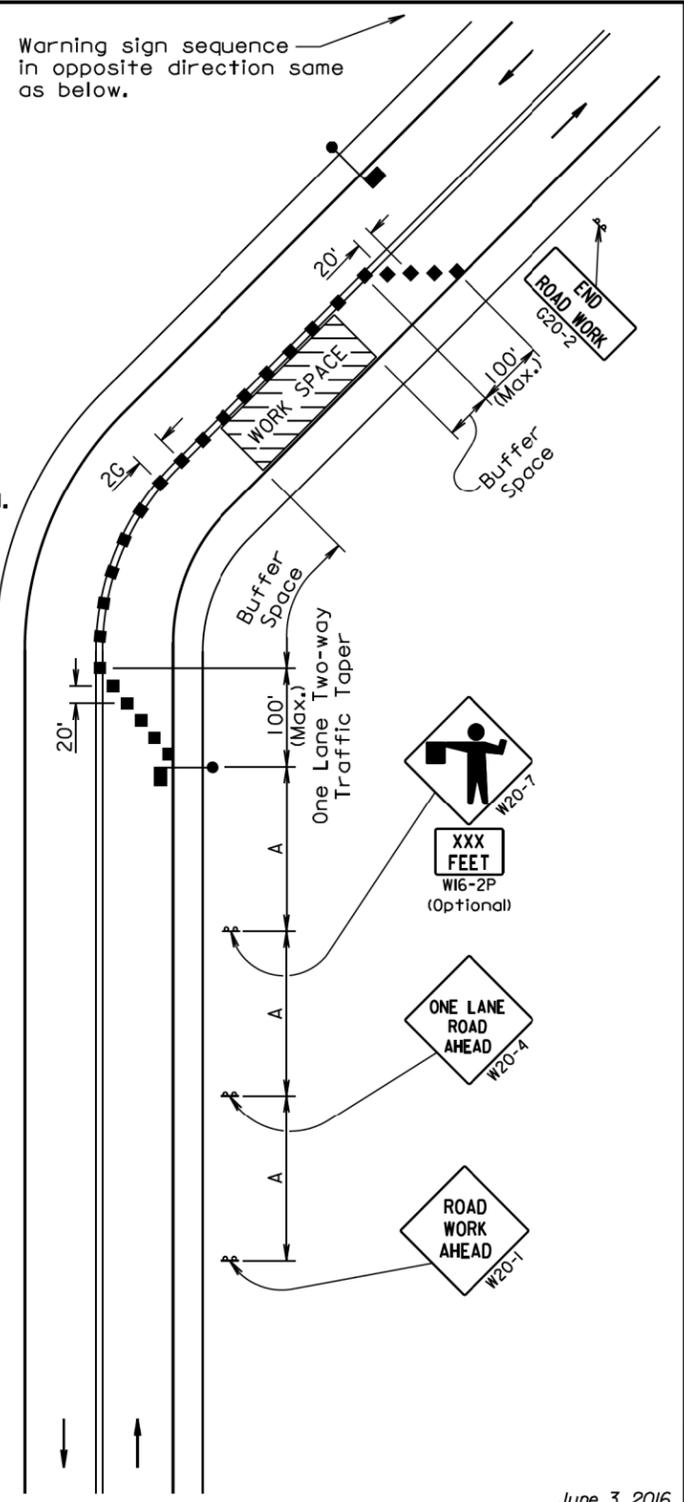
The channelizing devices shall be drums or 42" cones.

Channelizing devices are not required along the centerline adjacent to work area when pilot cars are utilized for escorting traffic through the work area.

Channelizing devices and flaggers shall be used at intersecting roads to control intersecting road traffic as required.

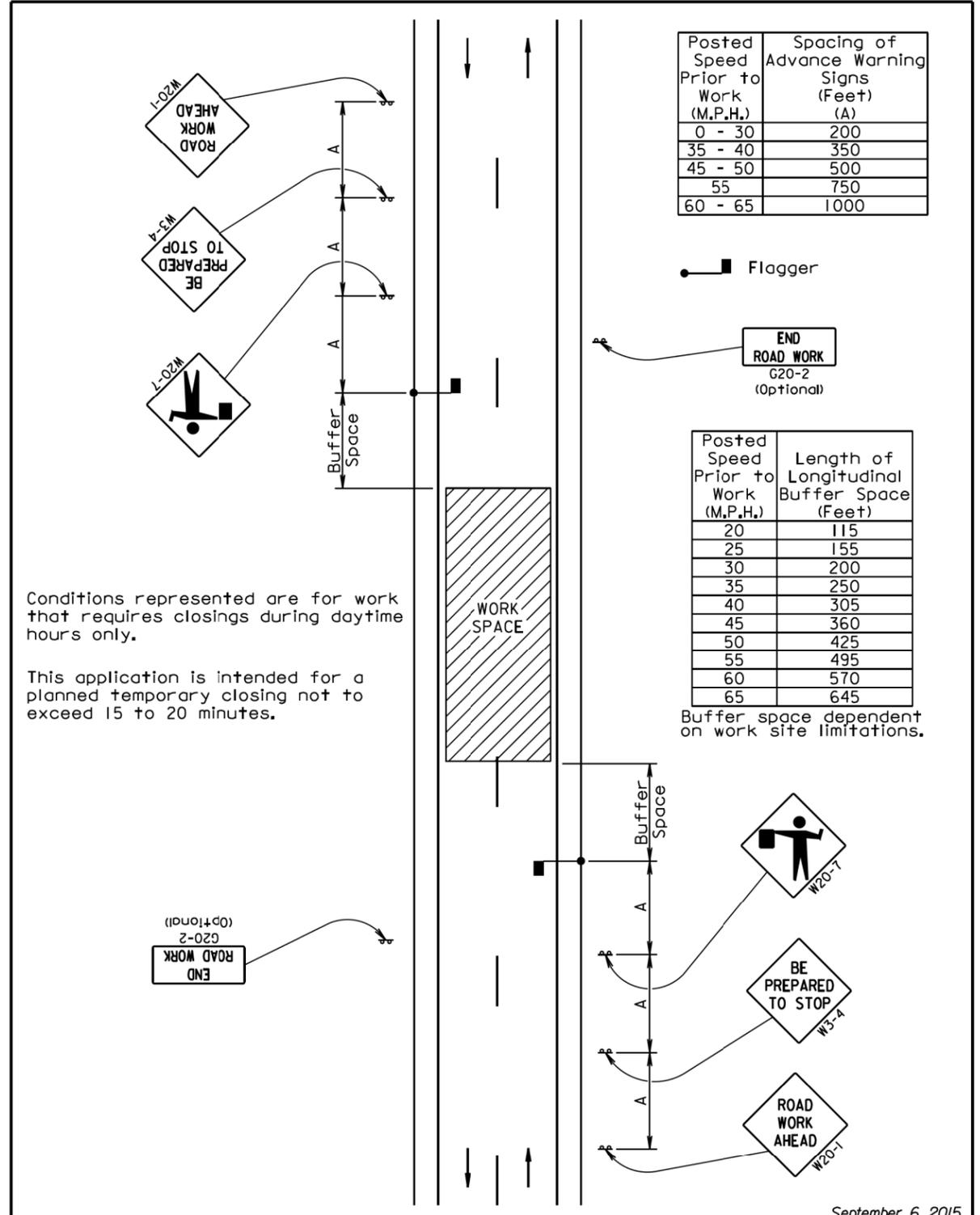
The buffer space should be extended so that the two-way traffic taper is placed before a horizontal or vertical curve to provide adequate sight distance for the flagger and queue of stopped vehicles.

The length of A may be adjusted to fit field conditions.



June 3, 2016

S D D O T	GUIDES FOR TRAFFIC CONTROL DEVICES LANE CLOSURE WITH FLAGGER PROVIDED	PLATE NUMBER 634.23
	Published Date: 3rd Qtr. 2020	Sheet 1 of 1



Conditions represented are for work that requires closings during daytime hours only.

This application is intended for a planned temporary closing not to exceed 15 to 20 minutes.

Posted Speed Prior to Work (M.P.H.)	Spacing of Advance Warning Signs (Feet) (A)
0 - 30	200
35 - 40	350
45 - 50	500
55	750
60 - 65	1000

● Flagger

END ROAD WORK G20-2 (Optional)

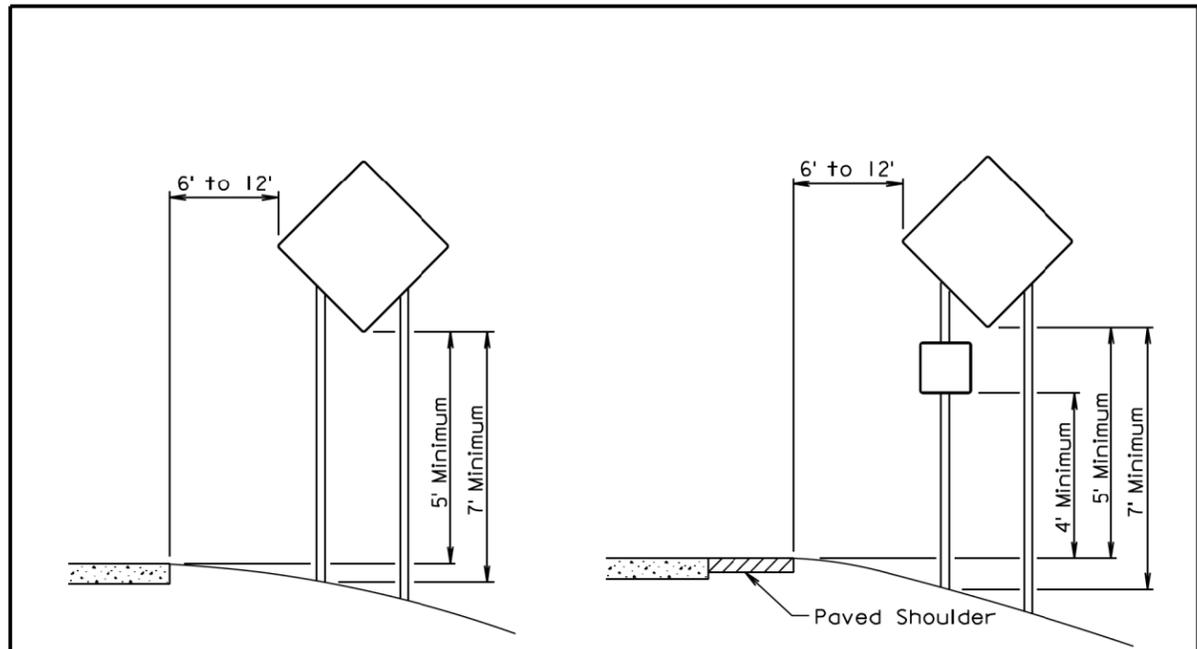
Posted Speed Prior to Work (M.P.H.)	Length of Longitudinal Buffer Space (Feet)
20	115
25	155
30	200
35	250
40	305
45	360
50	425
55	495
60	570
65	645

Buffer space dependent on work site limitations.

September 6, 2015

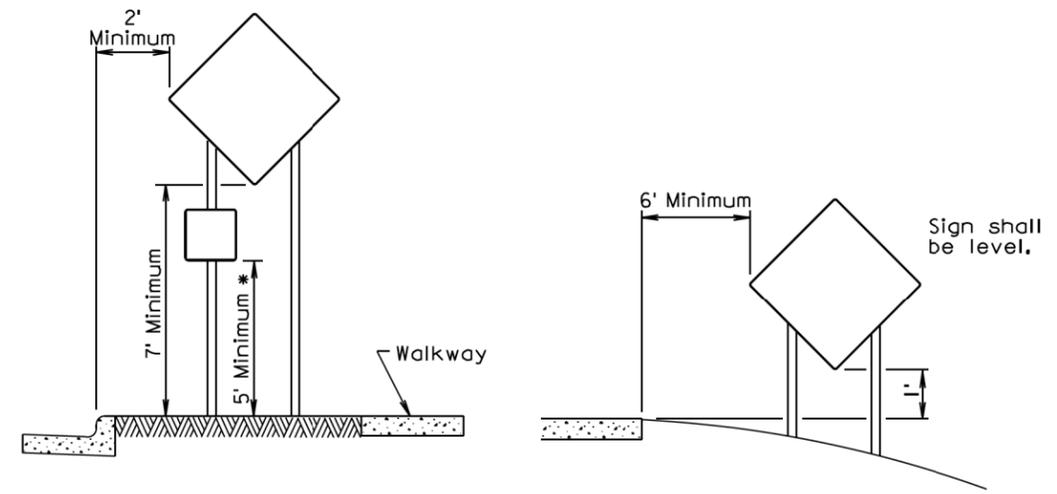
S D D O T	GUIDES FOR TRAFFIC CONTROL DEVICES TEMPORARY ROAD WORK	PLATE NUMBER 634.30
	Published Date: 3rd Qtr. 2020	Sheet 1 of 1

Plot Scale - 1:200



RURAL DISTRICT

RURAL DISTRICT WITH SUPPLEMENTAL PLATE



URBAN DISTRICT

RURAL DISTRICT 3 DAY MAXIMUM

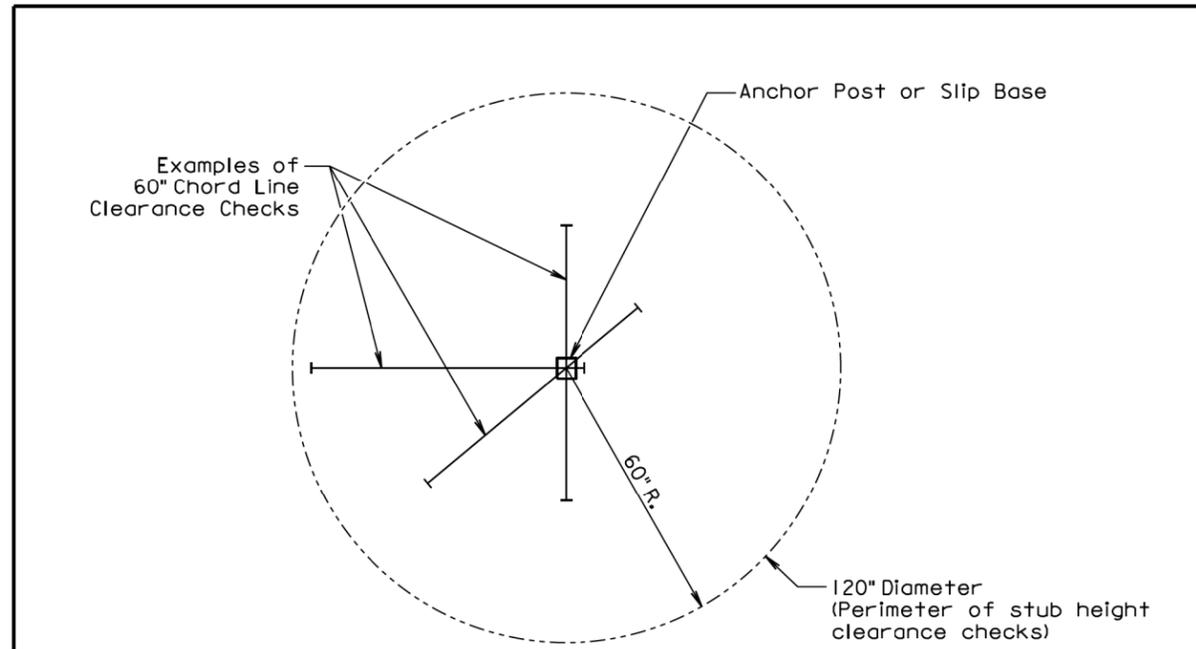
* If the bottom of supplemental plate is mounted lower than 7 feet above a pedestrian walkway, the supplemental plate should not project more than 4" into the pedestrian facility.

(Not applicable to regulatory signs)

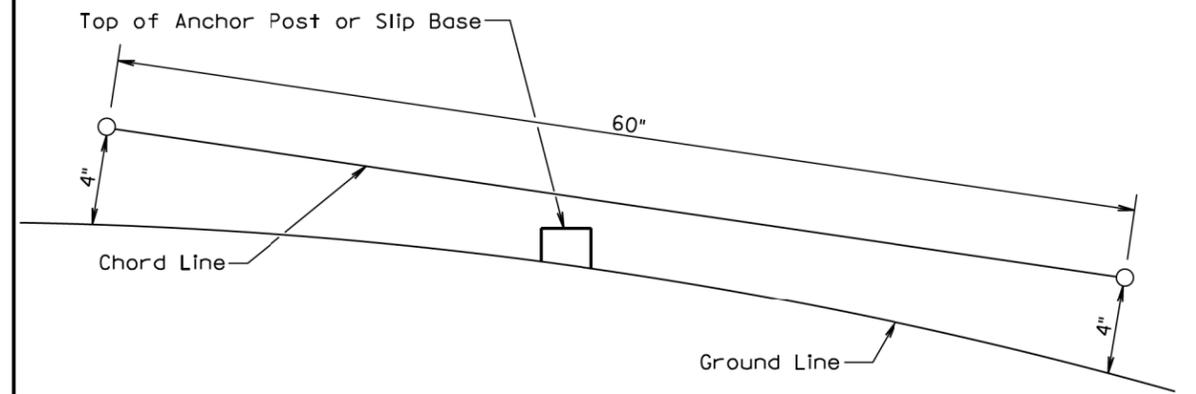
September 22, 2014

S D D O T	CRASHWORTHY SIGN SUPPORTS (Typical Construction Signing)	PLATE NUMBER 634.85
		Sheet 1 of 1

Published Date: 3rd Qtr. 2020



PLAN VIEW
(Examples of stub height clearance checks)



ELEVATION VIEW

GENERAL NOTES:

The top of anchor posts and slip bases SHALL NOT extend above a 60" chord line within a 120" diameter circle around the post with ends 4" above the ground.

At locations where there is curb and gutter adjacent to the breakaway sign support, the stub height shall be a maximum of 4" above the ground line at the localized area adjacent to the breakaway support stub.

The 4" stub height clearance is not necessary for U-channel lap splices where the support is designed to yield (bend) at the base.

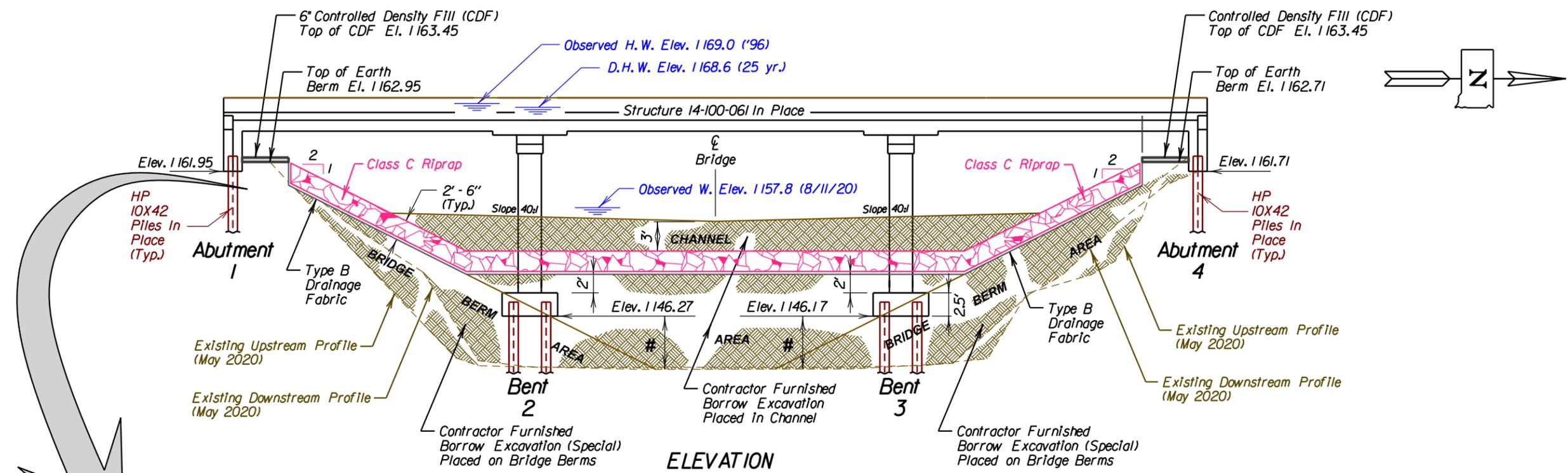
July 1, 2005

S D D O T	BREAKAWAY SUPPORT STUB CLEARANCE	PLATE NUMBER 634.99
		Sheet 1 of 1

Published Date: 3rd Qtr. 2020

File - ...to:Standard Plates.dgn

Plotted From - TRM113318



BRIDGE BERM AND CHANNEL REPAIR

1. A large portion of the bridge berms and channel have been washed away and the remainder of the berms have experienced settlement. The bridge berms and channel will be reconstructed and reshaped as detailed in these plans.
2. Reconstruct the riprapped berms to at least one foot above the bottom of the abutment backwall seat and fill in the eroded channel and bridge berms. The berm slope will be benched into stable embankment during reshaping and reconstruction. The borrow will be placed in horizontal lifts perpendicular to the centerline of the structure. Shape the fill in front of the wing walls to divert runoff from the inslopes away from the face of the berm slope. Compaction of the reconstructed embankment will be governed by the Ordinary Compaction Method.
3. At the upper part of the berm slope, lack of clearance between the structure and berm will prohibit the use of compaction equipment. The borrow in this area will be placed by a method approved by and compacted to the satisfaction of the Engineer.
- 4a. Borrow used to reconstruct the berm slope will be Contractor Furnished Borrow Excavation (Special). The borrow will have a maximum of 70% passing the #4 sieve, have a maximum Liquid Limit (LL) of 45 and a Plastic Index (PI) greater than 10 but less than 25. The Contractor will be responsible for one gradation, LL and PI test for each borrow source for berm reconstruction. The results will be supplied to the Engineer in writing.

Cost for berm reconstruction and reshaping will be included in the contract unit price per cubic yard for Contractor Furnished Borrow Excavation (Special). This payment will be full compensation for furnishing material, labor, tools, and equipment necessary to reconstruct and reshape the bridge berms.
- 4b. Borrow used to reconstruct the channel will be Contractor Furnished Borrow Excavation.

Cost for channel reconstruction and reshaping will be included in the contract unit price per cubic yard for Contractor Furnished Borrow Excavation. This payment will be full compensation for furnishing material, labor, tools, and equipment necessary to reconstruct and reshape the channel.

CONTRACTOR FURNISHED BORROW EXCAVATION (SPECIAL) & CONTRACTOR FURNISHED BORROW EXCAVATION

The Contractor will provide a suitable site(s) for contractor furnished borrow excavation (special) and the contractor furnished borrow excavation material. The Contractor is responsible for obtaining all required permits and clearances for the borrow site(s). The borrow material will be approved by the Engineer.

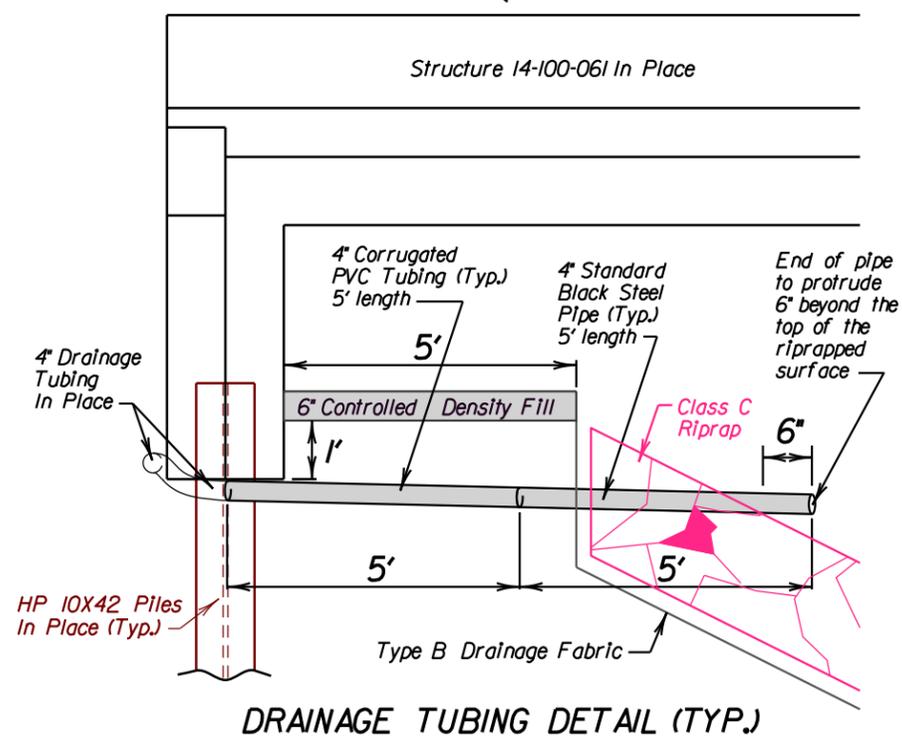
Restoration of the borrow site(s) will be the responsibility of the Contractor.

NOTE:
Care shall be taken not to damage the existing concrete structure. Any damage will be repaired by the Contractor at no cost to the State.

Scour beneath footings was observed to be 6.5' deep on 8/11/2020.

LAYOUT FOR SCOUR REPAIR & RIPRAP FOR 106'-0" CONTINUOUS CONCRETE BRIDGE 36'-0" ROADWAY OVER VERMILLION RIVER OVERFLOW
SEC. 2/3-T94N-R52W 0° SKEW
STA. 218 + 09.41 TO STA. 219 + 15.41
STRUCTURE 14-100-061
PCN 165M

CLAY COUNTY
S. D. DEPT. OF TRANSPORTATION
AUGUST 2020



Cost for material, labor and equipment necessary to reattach and replace the drainage tubing at all four corners of the bridge will be included in the contract lump sum price for incidental work.

PLOT SCALE - 1:12.5

PLOTTED FROM - TRML1115

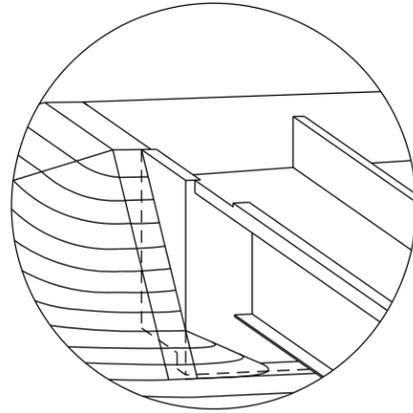
PLOT NAME - 3

FILE - ... \CLAY\PLAN\PLAN 14-100-061.DGN

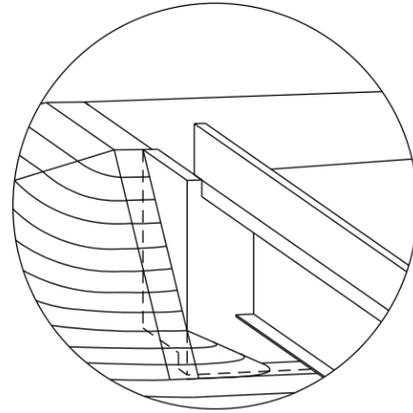
STEEL GIRDER

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	019-288	15	20

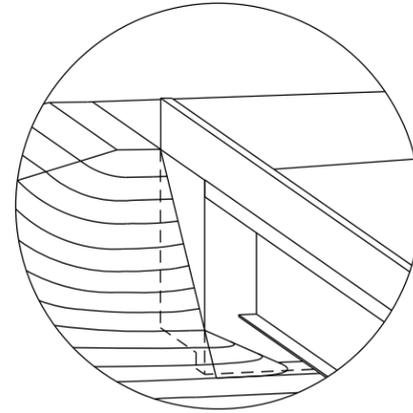
Plotting Date: 08/17/2020



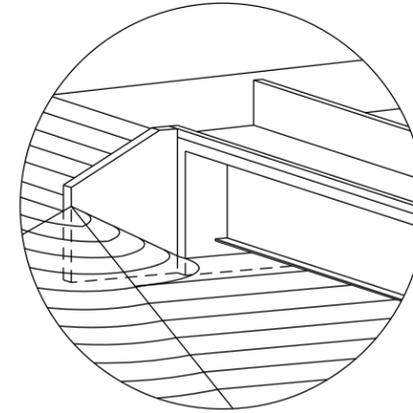
SPILL CONE DETAIL AT EMBANKMENT
(Bridge and Sidewalk Railing not shown)



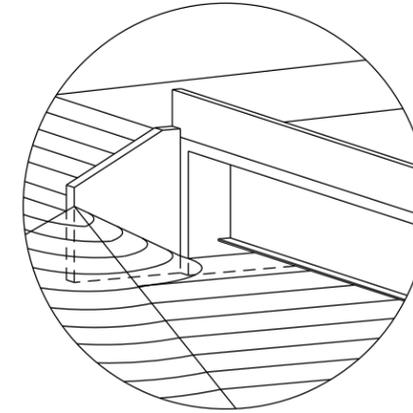
SPILL CONE DETAIL AT EMBANKMENT
(Bridge and Sidewalk Railing not shown)



SPILL CONE DETAIL AT EMBANKMENT
(Bridge and Sidewalk Railing not shown)

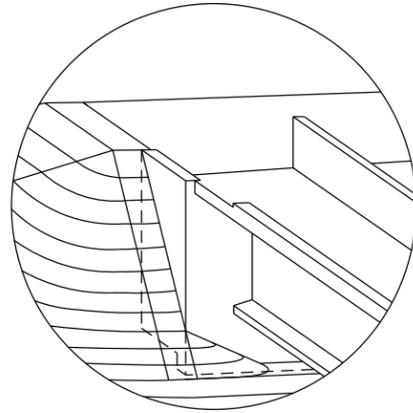


SPILL CONE DETAIL AT EMBANKMENT
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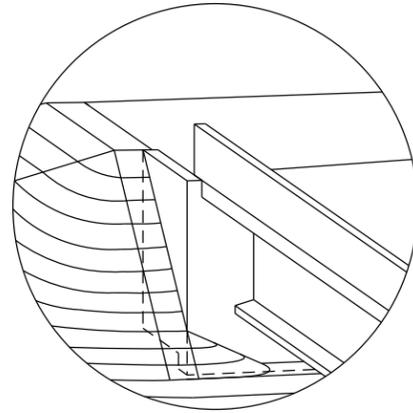


SPILL CONE DETAIL AT EMBANKMENT
(Bridge and Sidewalk Railing not shown)

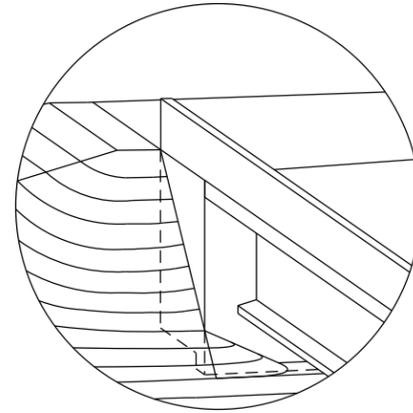
PRESTRESSED GIRDER



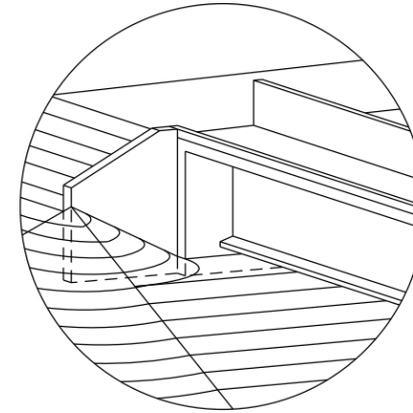
SPILL CONE DETAIL AT EMBANKMENT
(Bridge and Sidewalk Railing not shown)



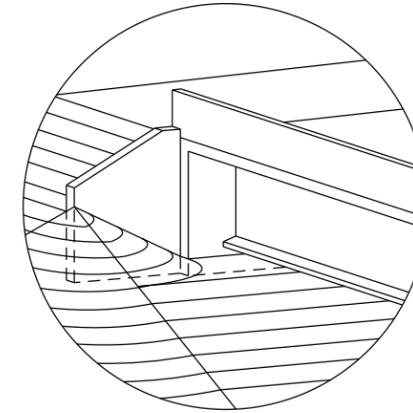
SPILL CONE DETAIL AT EMBANKMENT
(Bridge and Sidewalk Railing not shown)



SPILL CONE DETAIL AT EMBANKMENT
(Bridge and Sidewalk Railing not shown)

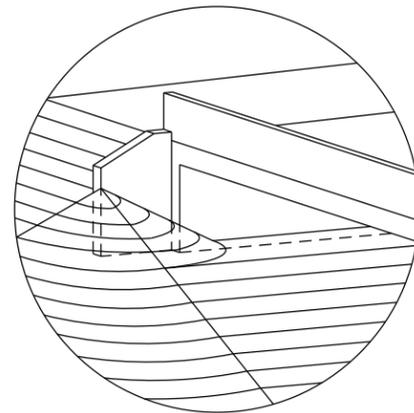


SPILL CONE DETAIL AT EMBANKMENT
(Bridge and Sidewalk Railing not shown)

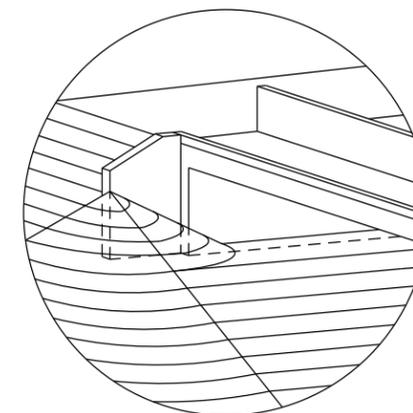


SPILL CONE DETAIL AT EMBANKMENT
(Bridge and Sidewalk Railing not shown)

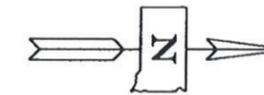
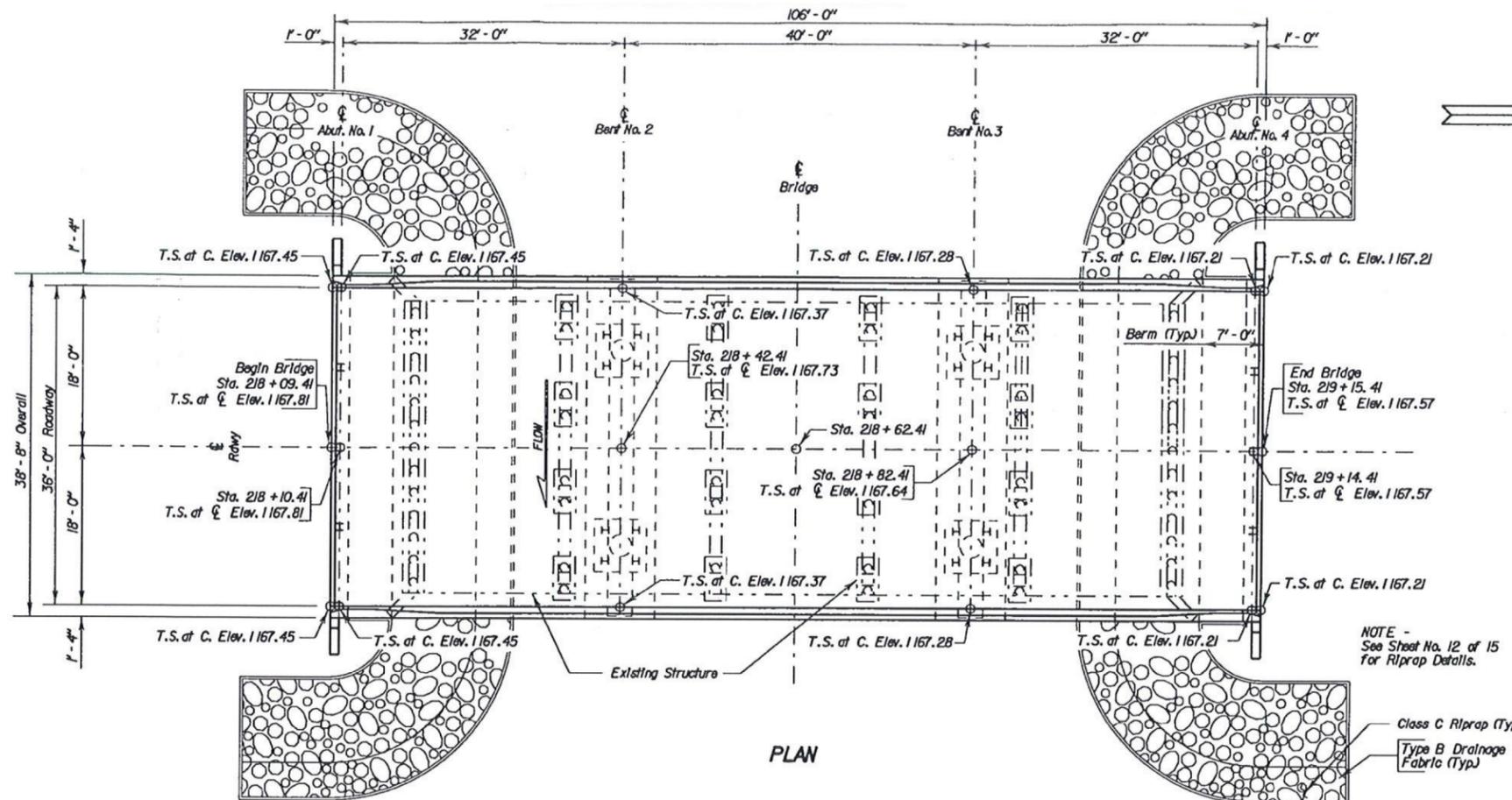
CONTINUOUS CONCRETE



SPILL CONE DETAIL AT EMBANKMENT
(Bridge and Sidewalk Railing not shown)



SPILL CONE DETAIL AT EMBANKMENT
(Bridge and Sidewalk Railing not shown)

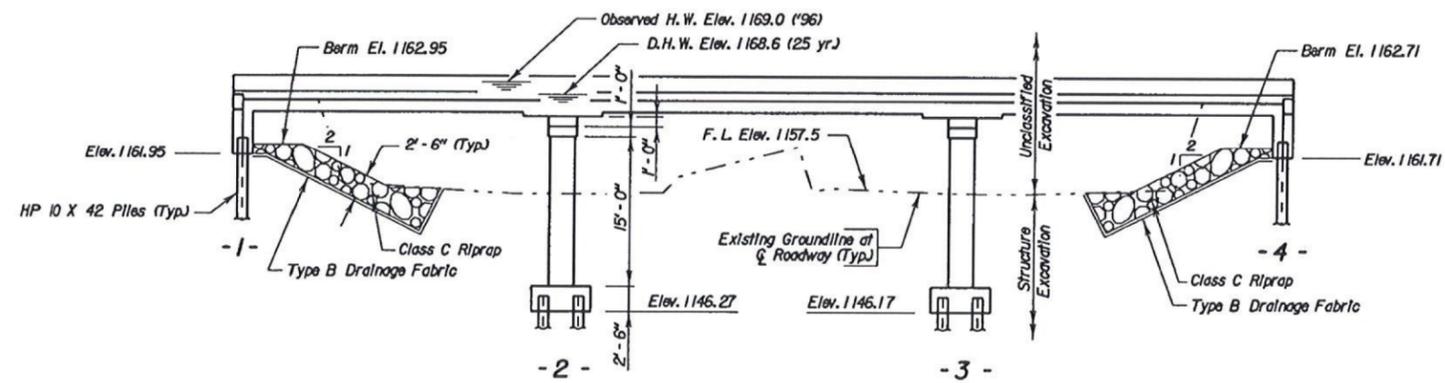
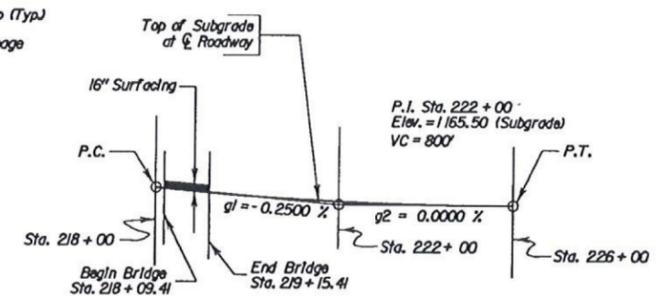


NOTE -
T.S. at C.EI. = Top of Slab at Centerline Elevation
T.S. at C.EI. = Top of Slab at Curb Elevation

- X020 -
INDEX OF BRIDGE SHEETS-

- Sheet No. 1 - General Drawing
- Sheet No. 2 - Estimate of Structure Quantities & Notes
- Sheet No. 3 - Notes (Continued)
- Sheet No. 4 - Notes (Continued)
- Sheet No. 5 - Subsurface Investigation & Piling Layout
- Sheet No. 6 - Bridge Contour Map Details
- Sheet No. 7 - Abutment Details
- Sheet No. 8 - Bent Details
- Sheet No. 9 - Superstructure Details
- Sheet No. 10 - End Block and Barrier Curb Details
- Sheet No. 11 - Details of Bridge End Backfill
- Sheet No. 12 - Riprap Details
- Sheet No. 13 - As-Built Elevation Survey
- Sheet No. 14 - Details of Standard Plate No. 460.02 & No. 460.05
- Sheet No. 15 - Details of Standard Plate No. 510.40 & No. 630.92

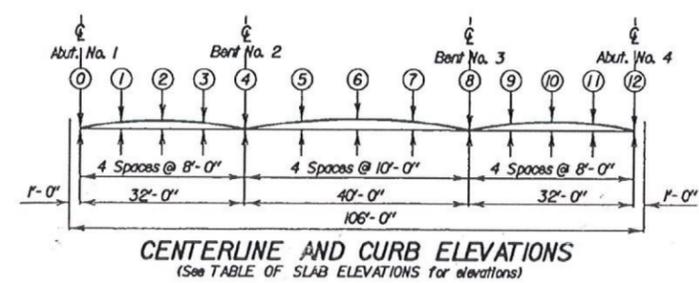
NOTE -
See Sheet No. 12 of 15
For Riprap Details.



* Camber for Dead Load Deflection plus Plastic Flow, Shown on Sheet No. 9 of 15, have been included in the elevations shown.

*** TABLE OF SLAB ELEVATIONS**

Slab Point	Left Curb	℄	Right Curb
0	1167.447	1167.807	1167.447
1	1167.465	1167.825	1167.465
2	1167.450	1167.810	1167.450
3	1167.406	1167.766	1167.406
4	1167.370	1167.730	1167.370
5	1167.367	1167.727	1167.367
6	1167.364	1167.724	1167.364
7	1167.321	1167.681	1167.321
8	1167.278	1167.638	1167.278
9	1167.277	1167.637	1167.277
10	1167.284	1167.644	1167.284
11	1167.262	1167.622	1167.262
12	1167.208	1167.568	1167.208



HYDRAULIC DATA

Q_d	1250 cfs
A_d	250 sq.ft.
V_d	5.0 fps
Q_F	1250 cfs
V_{max}	5.0 fps

Q_d - Design discharge for the proposed bridge based on 25 year frequency. EI. 1168.6
 Q_F - Designated peak discharge for the basin approaching proposed project based on 25 year frequency.
 Q_{OT} - Overtopping discharge and frequency 5* year recurrence interval. EI. 1166.8. Location near Sta. 219+20±.
 V_{max} = Maximum computed outlet velocity for the proposed bridge, based on a 25 year frequency.

* The overtopping frequency is for the floodplain, not for the individual site.

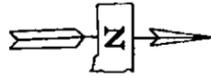
ORIGINAL CONSTRUCTION PLANS

GENERAL DRAWING
FOR
106'-0" CONTINUOUS CONCRETE BRIDGE
36'-0" ROADWAY SEC. 2/3-T94N-R52W
OVER VERMILLION RIVER OVERFLOW 0° SKEW
STA. 218+09.41 TO STA. 219+15.41 P-BRF 0019(15)15
STR. NO. 14-100-061 HS25-44
PCEMS 3731 (& ALT.)

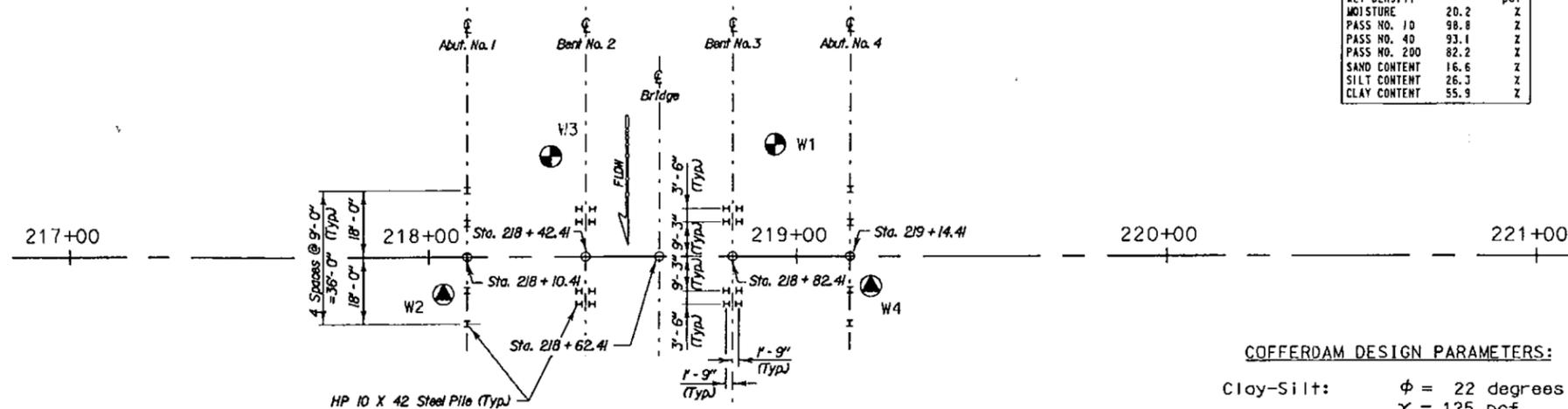
CLAY COUNTY
S. D. DEPT. OF TRANSPORTATION
STR. NO. 14-100-061 JUNE 2003

PLANS BY :
OFFICE OF BRIDGE DESIGN, SOUTH DAKOTA DEPARTMENT OF TRANSPORTATION

DESIGNED BY KDG/DC CLAY3731	DRAWN BY LS	CHECKED BY DC/KDG	APPROVED <i>[Signature]</i> BRIDGE ENGINEER
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HOLE NUMBER	W1
STATION	218+94
DEPTH	152.0± ft
SOIL COLOR	GRAY/BROWN
CLASSIFICATION	CLAY
STRENGTH (Q _u)	----- psf
DRY DENSITY	----- pcf
WET DENSITY	----- pcf
MOISTURE	20.2 %
PASS NO. 10	98.8 %
PASS NO. 40	93.1 %
PASS NO. 200	82.2 %
SAND CONTENT	16.6 %
SILT CONTENT	26.3 %
CLAY CONTENT	55.9 %



PILING LAYOUT

COFFERDAM DESIGN PARAMETERS:

Clay-Silt:	$\phi = 22$ degrees
	$\gamma_w = 125$ pcf
	$c = 100$ psf
Sand:	$\phi = 28$ degrees
	$\gamma_w = 125$ pcf
	$c = 0$ psf
Sand & Gravel:	$\phi = 30$ degrees
	$\gamma_w = 120$ pcf
	$c = 0$ psf

GLACIATED TERRAIN CONTAINS ALL SIZES OF NATURAL MINERAL SEDIMENT RANGING FROM CLAY TO BOULDERS. STREAMS ORIGINATING IN OR FLOWING THROUGH GLACIATED TOPOGRAPHY CONTAIN SEDIMENT LOADS DERIVED FROM GLACIATED SOURCES. STREAM AND RIVER CROSSINGS CONTAIN SEDIMENT NATURALLY SORTED AND RANDOMLY CONCENTRATED. ALLUVIAL SEDIMENT LOCATED AT THIS PROJECT LOCATION MAY HAVE CONCENTRATED COARSER GRAVEL SUCH AS PEBBLES, COBBLES AND BOULDERS. THE BORINGS SHOWN REPRESENT MATERIAL ONLY THAT WERE FOUND AT THE EXACT LOCATION OF THE SMALL DIAMETER DRILL HOLE. COARSE GRANULAR MATERIAL MAY BE PRESENT IN AREAS NOT PENETRATED BY THE DEPICTED BORINGS.

THE GEOTECHNICAL ENGINEERING ACTIVITY HAS ON FILE ALL OF THE BORING LOGS FOR THIS PROJECT. THESE LOGS AND ADDITIONAL RESULTS OF LABORATORY TESTS, IF ANY, ARE AVAILABLE FOR REVIEW AT THE CENTRAL OFFICE IN PIERRE.

LEGEND

- AUGER TEST
- DRIVE TEST
- WATER
- CAVED
- SAMPLE ZONE

DRIVE TESTS CONDUCTED BY DROPPING A 490 POUND HAMMER 30 INCHES TO DRIVE A 2 7/8 INCH DRILL STEM WITH ATTACHED RETRACTABLE PLUG SAMPLER FOR TAKING UNDISTURBED SAMPLES AND TO MEASURE THE RESISTANCE TO PENETRATION OF THE SOIL.

GROUND WATER ELEVATIONS AS OF JULY 2002

W1	1157.1
W2	1156.6
W3	1156.9
W4	1158.1

MEASURED SKIN FRICTION

	ELEV	PSF
W2	1078.3	298
W4	1079.3	149

ORIGINAL CONSTRUCTION PLANS

SUBSURFACE INVESTIGATION & PILING LAYOUT FOR

106'-0" CONTINUOUS CONCRETE BRIDGE

36'-0" ROADWAY SEC. 2/3-T94N-R52W

OVER VERMILLION RIVER OVERFLOW 0° SKEW

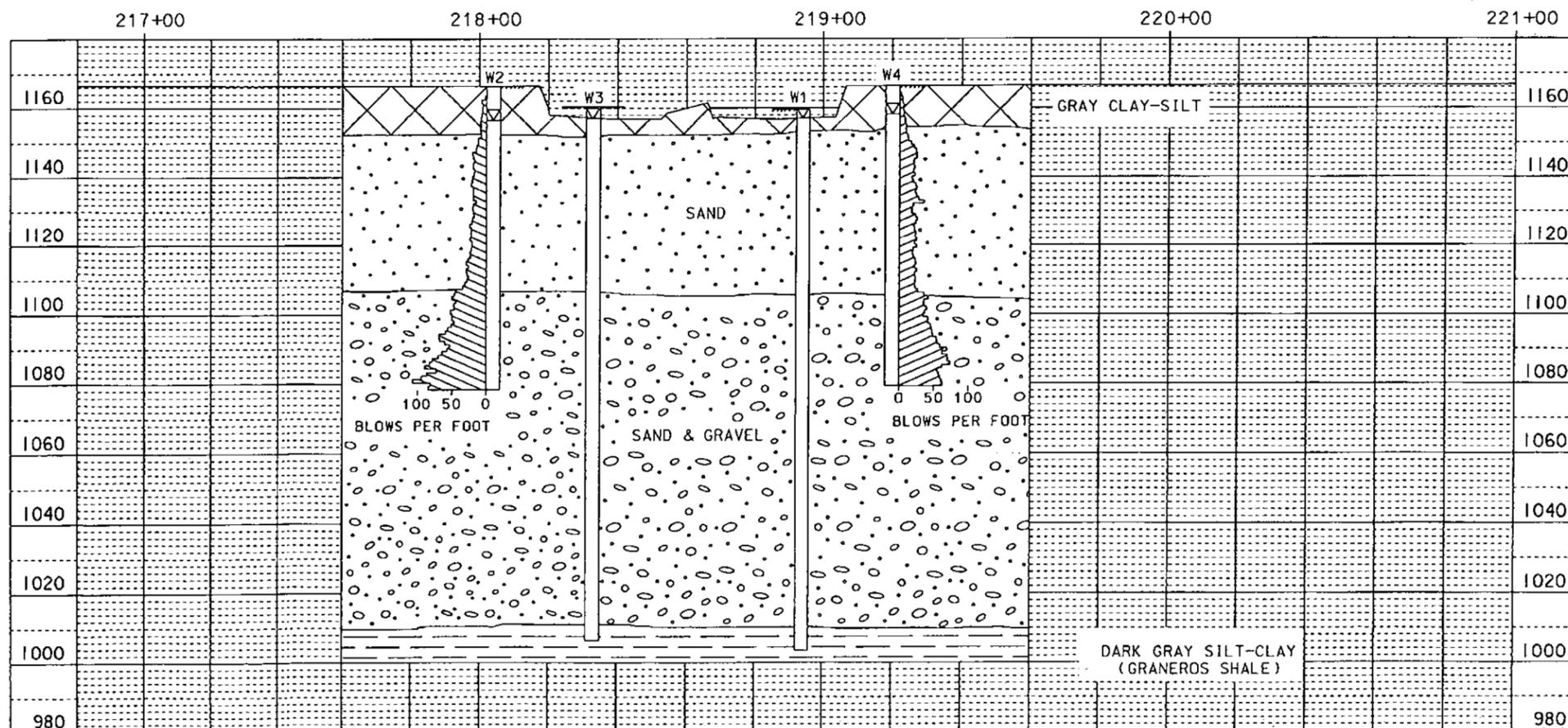
STA. 218+09.41 TO STA. 219+15.41 P-BRF 0019(15)15

STR. NO. 14-100-061 HS25-44

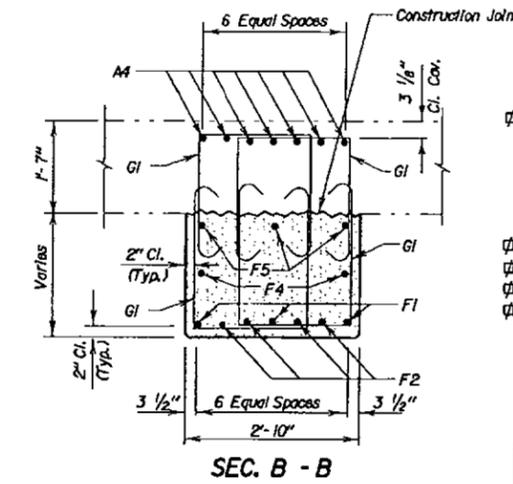
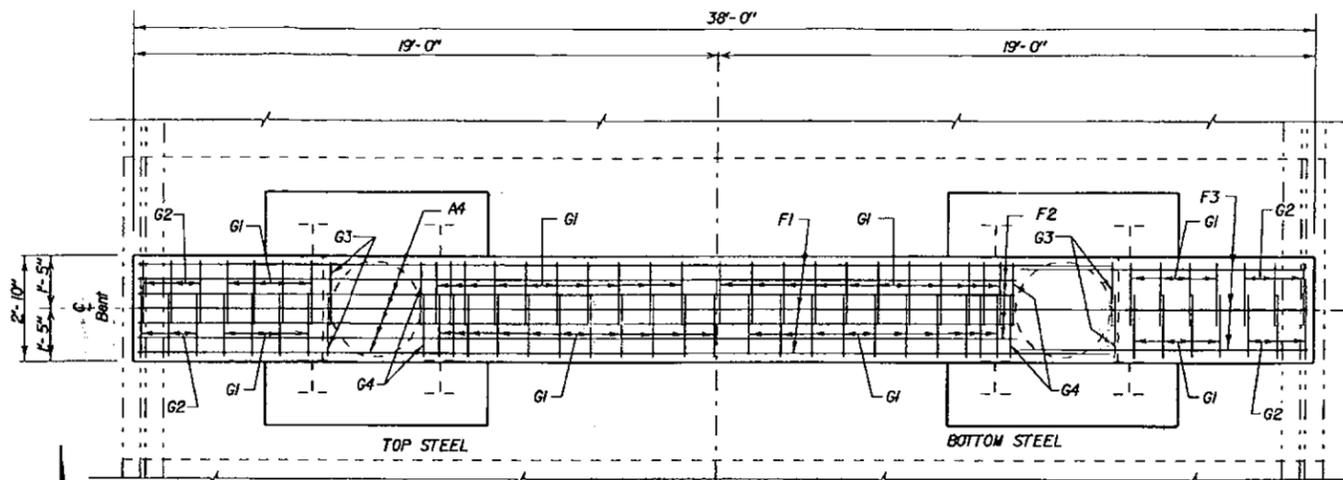
CLAY COUNTY (& ALT.)

S. D. DEPT. OF TRANSPORTATION

STR. NO. 14-100-061 JUNE 2003



DESIGNED BY KDC/DC CLAY3731	DRAWN BY NN/LS 3731SE05	CHECKED BY DV/KDC/DC	APPROVED <i>John C. Cole</i> BRIDGE ENGINEER
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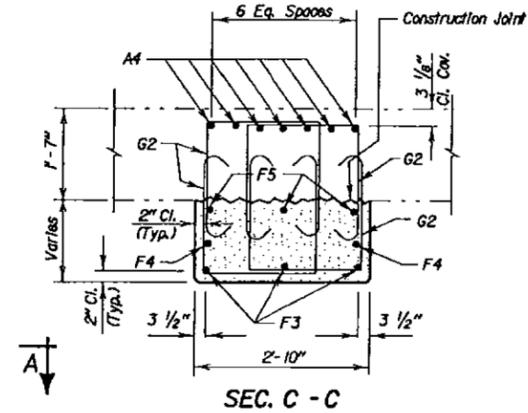
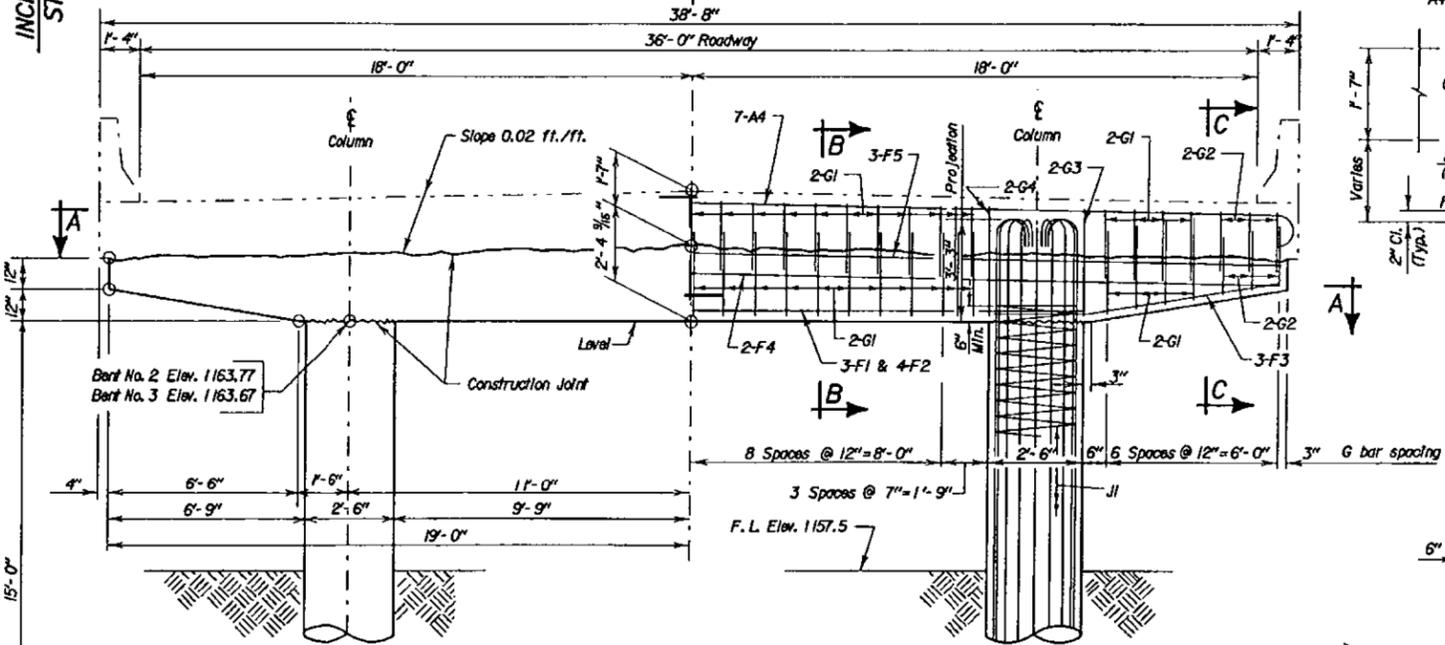


REINFORCING SCHEDULE					Bending Details	
(For One Bent)						
Mk. No.	Size	Length	Type			
A4	7	10	4'-2"	1		
F1	3	10	24'-6"	Str.		
F2	4	10	19'-6"	Str.		
F3	6	4	9'-3"	19B		
F4	2	4	37'-8"	Str.		
F5	3	6	37'-8"	Str.		
G1	116	4	7'-7"	S3		
G2	24	4	5'-10"	S3		
G3	4	4	10'-10"	T1A		
G4	4	4	10'-11"	T1A		
H1	18	8	7'-10"	17A		
H2	18	8	19'-2"	1A		
J1	2	3	228'-9"	Spiral		
K1	24	9	5'-6"	Str.		
K2	24	4	5'-6"	Str.		

INCREASING STATIONS

SEC. A - A

SEC. B - B



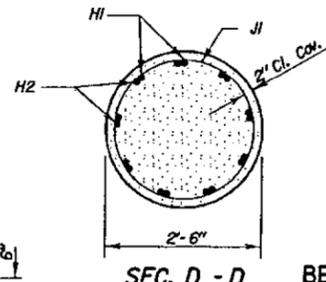
SEC. C - C

ITEM	UNIT	QUANTITY	
		Bent No. 2	Bent No. 3
Class A45 Concrete, Bridge	Cu. Yd.	20.2	20.2
Reinforcing Steel	Lb.	2986	2986
Epoxy Coated Reinforcing Steel	Lb.	1979	1979
Structure Excavation, Bridge	Cu. Yd.	33.7	34.0
HP 10 x 42 Steel Test Pile, Furnish & Drive	Ft.	1 @ 148' = 148'	1 @ 143' = 143'
HP 10 x 42 Steel Bearing Pile, Furnish & Drive	Ft.	7 @ 143' = 1001'	7 @ 143' = 1001'

Includes Spacer Bars 70 lbs. per Bent. Each spacer bar is computed at 1/4 lbs. per lin. ft. regardless of type furnished.

ESTIMATED QUANTITIES

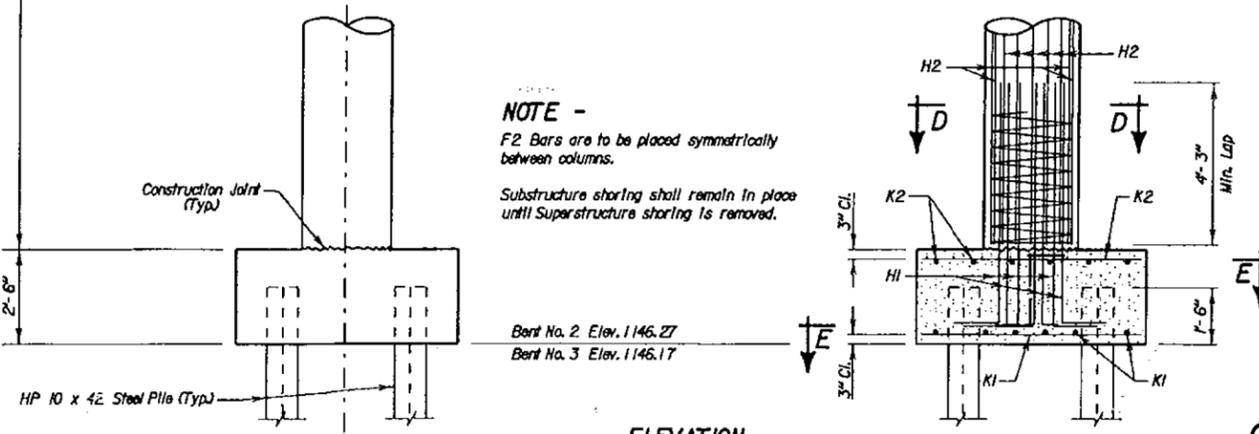
NOTE -
F2 Bars are to be placed symmetrically between columns.
Substructure shoring shall remain in place until Superstructure shoring is removed.



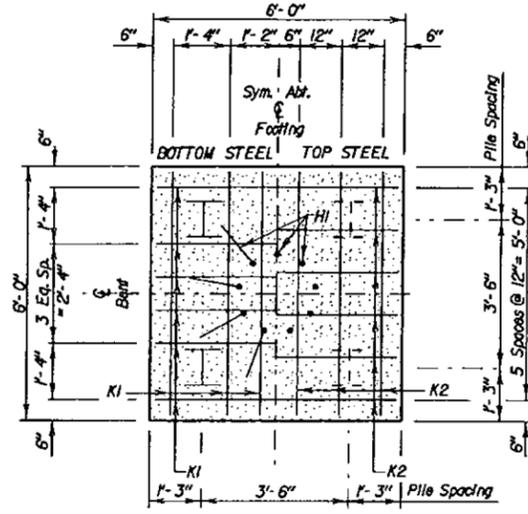
SEC. D - D BENT DETAILS FOR

106'-0" CONTINUOUS CONCRETE BRIDGE
36'-0" ROADWAY
OVER VERMILION RIVER OVERFLOW
STA. 218+09.41 TO STA. 219+15.41
STR. NO. 14-100-061

SEC. 2/3-T94N-R52W
0° SKEW
P-BRF 0019(15)15
HS25-44 (& ALT.)



ELEVATION

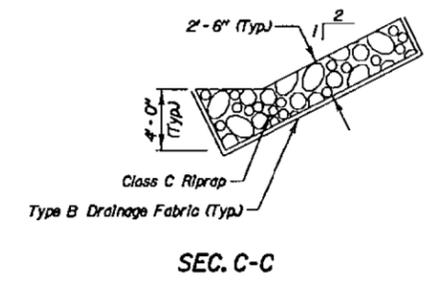
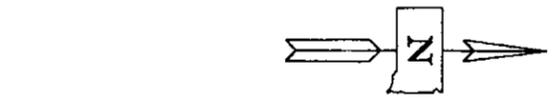
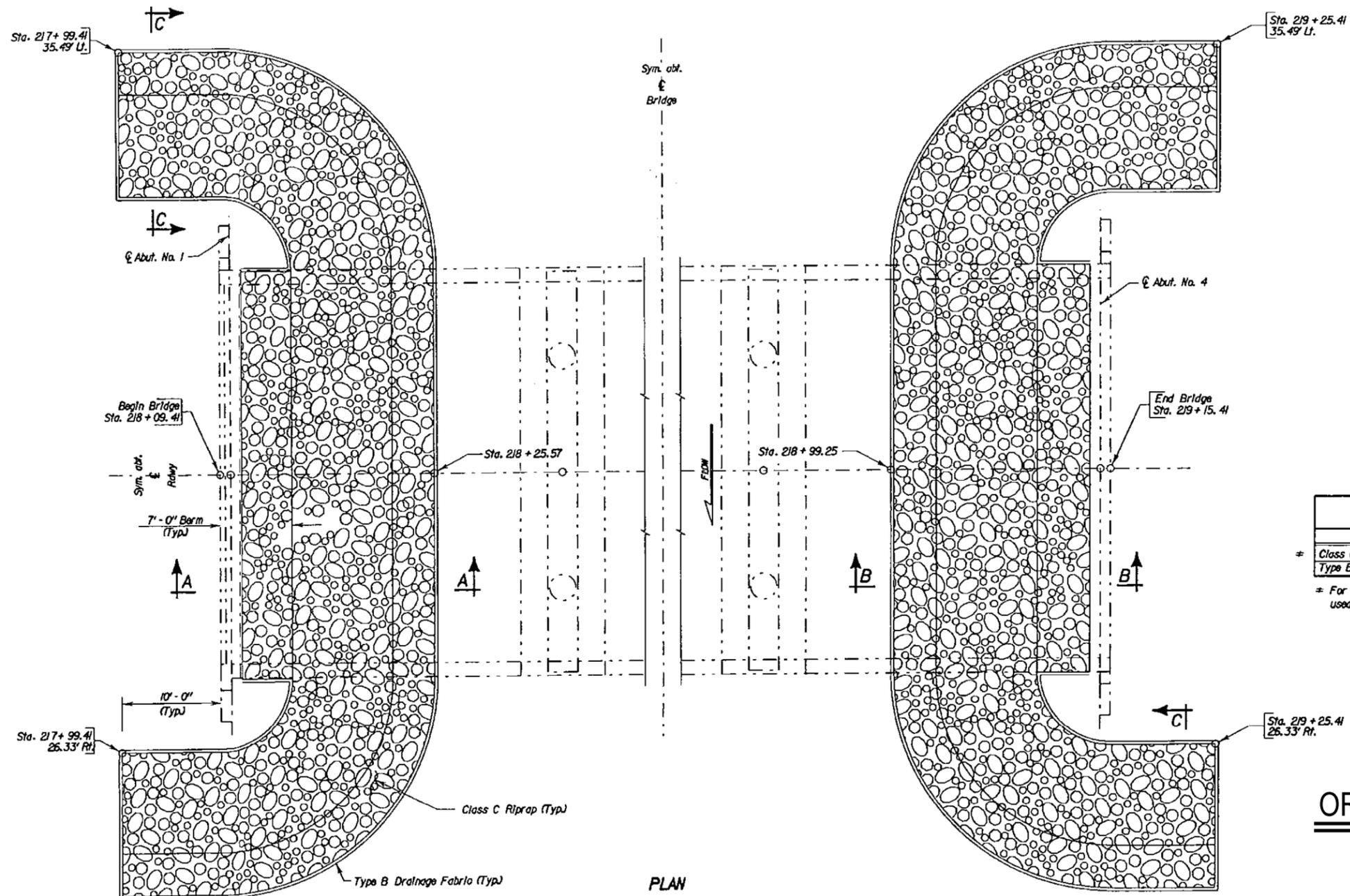


SEC. E - E

ORIGINAL CONSTRUCTION PLANS

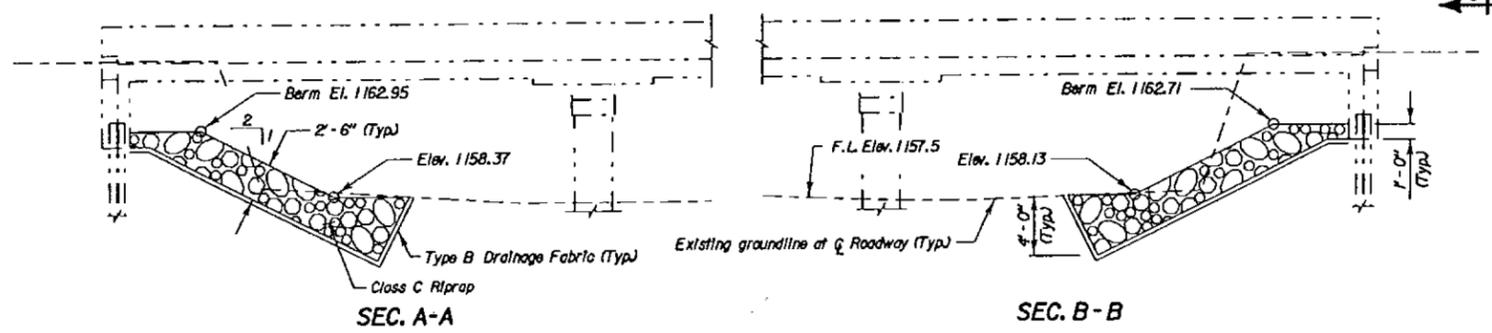
CLAY COUNTY
S. D. DEPT. OF TRANSPORTATION
STR. NO. 14-100-061 JUNE 2003

DESIGNED BY KDG/DC CLAY 3/7/01	DRAWN BY LS 3/7/01	CHECKED BY DC/KDG	APPROVED <i>John C. Cole</i> BRIDGE ENGINEER
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ESTIMATED QUANTITIES		
ITEM	UNIT	QUANTITY
Class C Riprap	Ton	443.3
Type B Drainage Fabric	Sq. Yd.	514

= For estimating purposes only. A factor of 1.4 tons/cu.yd. was used to convert Cu.Yds. to Tons



ORIGINAL CONSTRUCTION PLANS

RIPRAP DETAILS

FOR
106'-0" CONTINUOUS CONCRETE BRIDGE
 36'-0" ROADWAY
 OVER VERMILION RIVER OVERFLOW
 STA. 218+09.41 TO STA. 219+15.41
 STR. NO. 14-100-061

SEC. 2/3-T94N-R52W
 0° SKEW
 P-BRF 0019(15)15
 HS25-44
 (& ALT.)

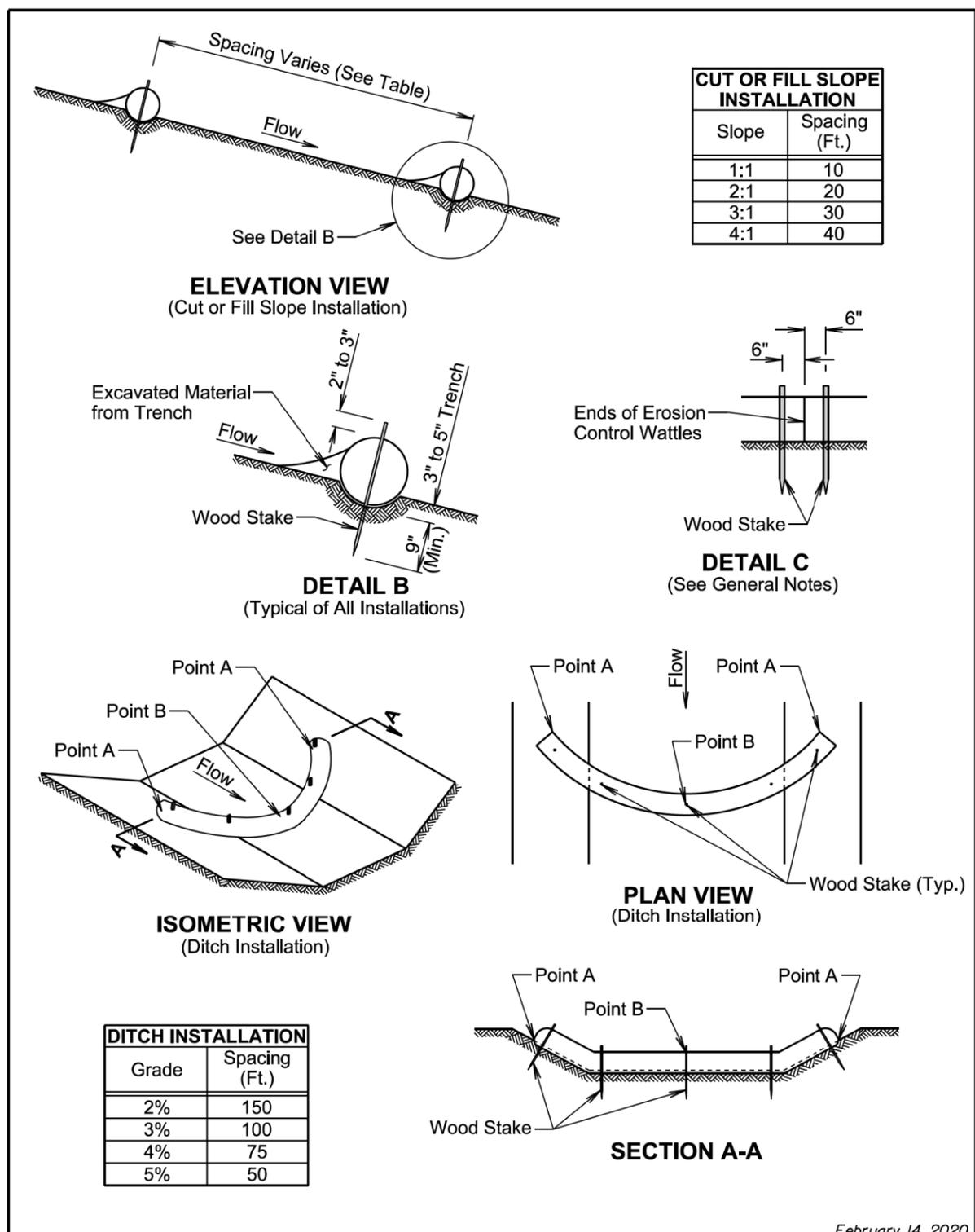
CLAY COUNTY
 S. D. DEPT. OF TRANSPORTATION
 STR. NO. 14-100-061 JUNE 2003

DESIGNED BY KDG/DC CLAY3731	DRAWN BY LS 3731SE12	CHECKED BY DC/KDG	APPROVED <i>John C. Cole</i> BRIDGE ENGINEER
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PLOT SCALE - 1:200

PLOT NAME - 5

FILE - ... \CLAY165M\STD PLATES 165M.DGN



February 14, 2020

February 14, 2020

Published Date: 3rd Qtr. 2020	S D D O T	EROSION CONTROL WATTLE	PLATE NUMBER 734.06
			Sheet 1 of 2

Published Date: 3rd Qtr. 2020	S D D O T	EROSION CONTROL WATTLE	PLATE NUMBER 734.06
			Sheet 2 of 2

GENERAL NOTES:

At cut or fill slope installations, wattles will be installed along the contour and perpendicular to the water flow.

At ditch installations, point A must be higher than point B to ensure that water flows over the wattle and not around the ends.

The Contractor will dig a 3" to 5" trench, install the wattle tightly in the trench so that daylight can not be seen under the wattle, and then compact the soil excavated from the trench against the wattle on the uphill side. See Detail B.

The stakes will be 1"x2" or 2"x2" wood stakes, however, other types of stakes such as rebar may be used only if approved by the Engineer. The stakes will be placed 6" from the ends of the wattles and the spacing of the stakes along the wattles will be 3' to 4'.

Where installing running lengths of wattles, the Contractor will butt the second wattle tightly against the first and will not overlap the ends. See Detail C.

The Contractor and Engineer will inspect the erosion control wattles in accordance with the storm water permit. The Contractor will remove, dispose, or reshape the accumulated sediment when necessary as determined by the Engineer.

Sediment removal, disposal, or necessary shaping will be as directed by the Engineer. All costs for removing accumulated sediment, disposal of sediment, and necessary shaping will be incidental to the contract unit price per cubic yard for "Remove Sediment".

All costs for furnishing and installing the erosion control wattles including labor, equipment, and materials will be incidental to the contract unit price per foot for the corresponding erosion control wattle contract item.

All costs for removing the erosion control wattle from the project including labor, equipment, and materials will be incidental to the contract unit price per foot for "Remove Erosion Control Wattle".

PLOTTED FROM - TRMLINT15